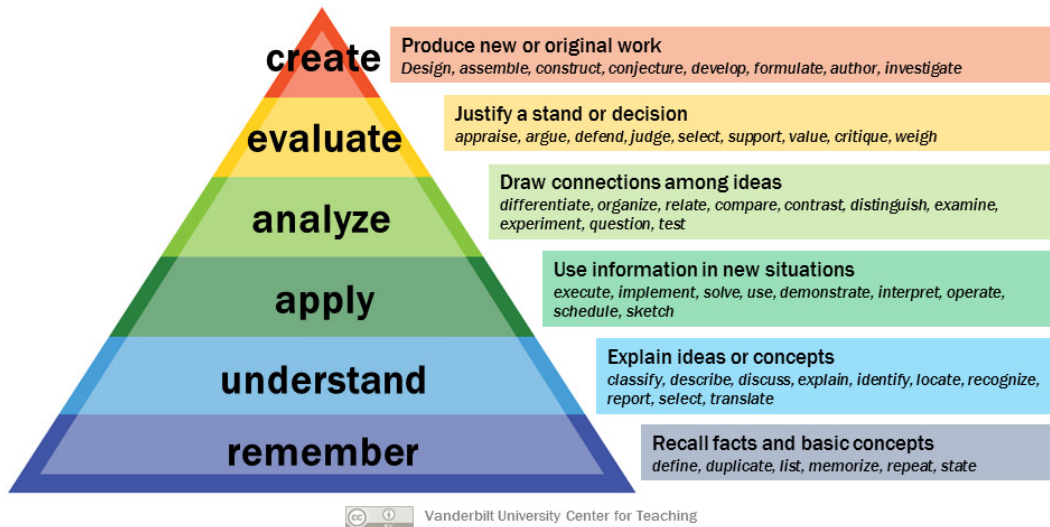# Active learning strategies for meaningful engagement

This guide provides steps to map your large group session's learning objectives/outcomes with the Bloom's Taxonomy classifications and outlines different activities and asynchronous and synchronous tools to achieve your goals.

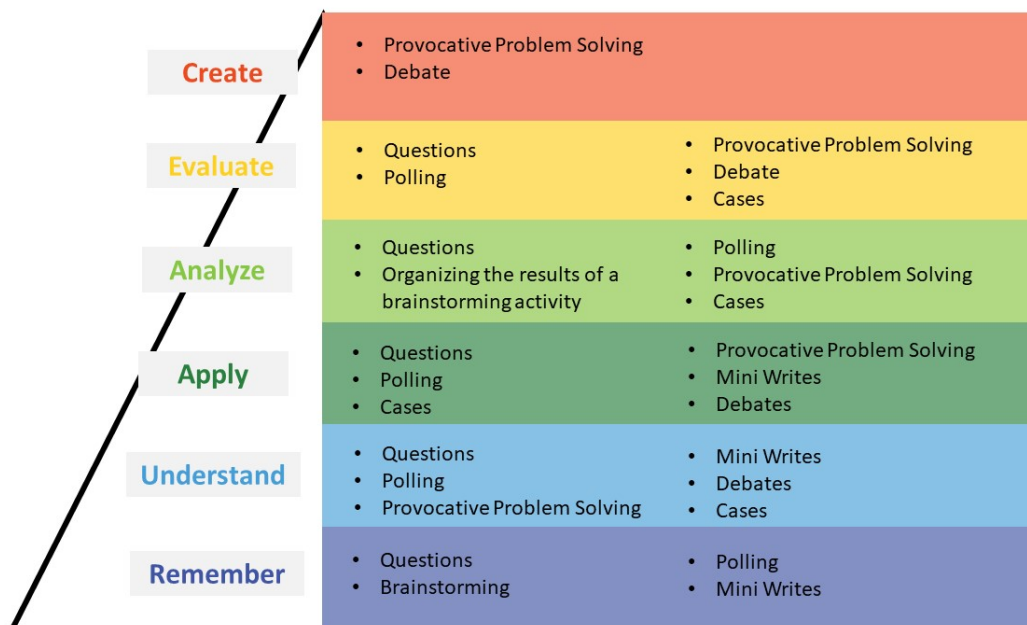## Step 1 Content – what are you trying to achieve?

When shifting your teaching approach to a new learning environment (face-to-face, virtual, or blended), your session's learning objectives/outcomes provide an effective foundation for building activities and selecting tools to engage learners.

Bloom's Taxonomy

Level	Description	Verbs
create	Produce new or original work	Design, assemble, construct, conjecture, develop, formulate, author, investigate
evaluate	Justify a stand or decision	appraise, argue, defend, judge, select, support, value, critique, weigh
analyze	Draw connections among ideas	differentiate, organize, relate, compare, contrast, distinguish, examine, experiment, question, test
apply	Use information in new situations	execute, implement, solve, use, demonstrate, interpret, operate, schedule, sketch
understand	Explain ideas or concepts	classify, describe, discuss, explain, identify, locate, recognize, report, select, translate
remember	Recall facts and basic concepts	define, duplicate, list, memorize, repeat, state

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How will learners achieve the objectives/outcomes?

Next, take a look at which activities easily align with each Bloom's Taxonomy classification.

Level	Activities	
Create	• Provocative Problem Solving • Debate	
Evaluate	• Questions • Polling	• Provocative Problem Solving • Debate • Cases
Analyze	• Questions • Organizing the results of a brainstorming activity	• Polling • Provocative Problem Solving • Cases
Apply	• Questions • Polling • Cases	• Provocative Problem Solving • Mini Writes • Debates
Understand	• Questions • Polling • Provocative Problem Solving	• Mini Writes • Debates • Cases
Remember	• Questions • Brainstorming	• Polling • Mini Writes

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Step 2 Parameters– When will you interact with learners?

Asynchronous activities involve self-directed, flexibly scheduled activities for learning. Ideally, asynchronous activities should:

- require little support or context from the teacher
- have clear deliverables, outcomes, or directions for the activity
- be clearly relevant and applicable to the learning objectives/outcomes

Asynchronous activities can occur before synchronous sessions in the form of pre-learning activities or priming materials on the content discussed in your session to ensure everyone has the same baseline level of knowledge. Or you can plan asynchronous activities after your session such as providing articles are videos on the session topic or answering learner questions on a Piazza discussion board.

You can also design your session to be entirely asynchronous, in this case it is recommended to provide clear guidance for learners on how to contact you for questions or additional support.

Synchronous activities involve real-time interaction with teacher(s) and learners. Ideally, synchronous activities should provide opportunities for significant interaction and collaboration between and with teacher(s) and learners. Synchronous sessions can also be ideal for:

- teachers wanting to teach particularly complex material where control over the pacing and the ability to check-in with learners is important
- topics containing sensitive or difficult subject-matter where teachers would like to set the tone for the discussions and monitor participation to create a safe learning environment

Timing

Asynchronous activities
Though asynchronous activities are flexibly scheduled, they should not be completely unscheduled. Provide a rough estimate of time asynchronous activities will take and/or when you plan on providing guidance or answering learner's questions.

Synchronous activities
Virtual activities often take longer than in-person activities since instructions have to be clearly provided for activities to go smoothly and if learners are using additional devices, such as their phone for Sli.do polls or creating and sharing a google document, additional time is needed for access before the activity can even begin. Plan for a few minutes extra than you normally would in in-person sessions for each virtual activity.

Step 3 Execution– How will participants achieve the learning objectives/outcomes?[ii]

Questions

Questions are the simplest form of interaction and can occur at any time during the session. By asking questions, you not only turn learners into active participants, but you can also determine their understanding of a topic. Some question types and examples include:

Open questions: support multiple ways of thinking.
Teacher: What can you identify in the following CT scan?

Closed questions: have clear answers, yes or no, or the recall of facts.
Teacher: What happens during a focal onset seizure?

Scaffolding questions: support instructors in building upon learner's identified knowledge and providing support to bridge gaps of knowledge so concepts are understood in greater depth.
Teacher: The microbiotas shown here are often found in the respiratory tract. Given this, why do you think everyone doesn't get an ear infection?
Learner: Not sure...
Teacher: Okay, so consider the purpose of our eustachian tube?
Learner: The eustachian tube drains the ear…
Teacher: Great. Yes, the eustachian tube drains the middle ear. Now, what would happen if the eustachian tube becomes blocked with fluid and pathogens?[iii]

Brainstorming

In this activity, learners generate ideas that are recorded in a visible space. When beginning a new topic, you might begin by saying, "*Tell me everything you know about…*" After collecting ideas, you might decide to put the learners' comments into categories, or you might ask learners to suggest categories and comment on the accuracy and relative importance of the array of facts, impressions, and interpretations. A central rule of brainstorming is aim to maximize volume first and save critiquing until after the idea generation time is over.

Polling

This technique involves providing questions and giving learners an appropriate time to respond. A quiz at the beginning of a session allows you to determine how familiar learners are with important terms, facts or concepts prior to the lecture, while a quiz that follows a session segment can reveal how well learners understood the material.

Provocative Problem Solving

Begin a session with a provocative question, paradox, enigma, or a case study. The reminder of the session is dedicated to collaboratively solving the problem. You refer back to the problem throughout the session, providing successive bits of information that help learners explore the topic and asking them to regularly update their understanding of what's going on.

Mini Writes

Punctuating your session with short writing assignments is a powerful way to assess the degree to which learners understand the presented material. You might ask, "*Take one minute and write down the key information pearls from that last section.*" Or "*Summarize the most important point of today's session (or one segment of the session) in one sentence.*" Or "*Identify one concept or question you are still struggling with on this topic*". If desired, some responses may be shared with the larger group.

Cases

Cases are detailed narratives of information that invite learners' analysis. Learners are asked to make key decisions or evaluations based on the information within the case. The two key elements to teaching with cases are the case itself and the discussion that follows the case. The case should contain a detailed patient history and results of any examinations performed. Then, you can facilitate learners clinical reasoning through probing questions.

Debates

Debates allow you to add a participatory dimension to your lecture without compromising your control. You can assign learners to one side of the debate or allow them to choose a side. Before concluding, ask two or three volunteers to make summary arguments for each side.

What tool will support your activity?

Zoom tool	What it is useful for	Example	Synchronous or Asynchronous?
Voice	Gathering verbal responses from individuals	*"Can someone describe a clinical experience they've had with this topic?"*	Synchronous
Video	Soliciting visual responses from individuals or groups	*"Rate your confidence with this topic out of 5 by raising 0-5 fingers"*	Synchronous
Chat	Collecting input from all participants at the same time, and for creating a record	*"What are some questions you have about this topic?"*	Synchronous
Response Buttons	Solicit pacing feedback	*"How is my pacing – too slow, too fast?"*	Synchronous
Breakout Rooms	Enabling group activities	*"Work with your group to decide what you would do if presented with this case"*	Synchronous
File Share	Distributing a handout, article, or resource to follow along the discussion	*"I have just shared a diagram of the heart with the various components labeled A, B, C, D, etc. Let's fill out the proper name for each of these components together and you can"*	Synchronous
External Tools (outside Zoom)			
Sli.do Polls	Collecting answers to multiple-choice or yes/no polls and answers to open-text questions anonymously	*"Go to slido.com and enter the code XXXX to answer the question 'How many chambers does the heart have?'"* *One, Two, Three or Four*	Synchronous
YouTube/Vimeo Videos	Show videos for context	*"This video shows the One Minute Preceptor in action"*	Synchronous Asynchronous
Google docs	Collaborative brainstorming in small groups	*"In your breakout groups, list all the possible presentations of a COVID-19 patient"*	Synchronous Asynchronous
Pen/Paper	Key messages and lessons learned	*"For your own learning, write down one thing you want to learn more about after this session?"*	Synchronous Asynchronous
Piazza Discussion board	Discussions or Q&As that can be posted/answered by both teachers and learners. Teachers can "Endorse" correct answers	*"Post your questions on Piazza and try to answer your peers' questions. I will login in a few days and endorse the correct responses and provide answers for any unanswered questions.*	Asynchronous

File sharing	Distributing a handout, article, or resource for pre/post study	*"Please watch this video on appropriate donning and doffing before attending the session."*	Asynchronous
Lecture Recording (Camtasia)	Record content for learners synchronously	*"I have recorded a 20-minute lecture on diabetes management"*	Asynchronous

Step 4 – Map it out: design your session

Content		Parameters		Execution	
Bloom's Taxonomy Classification What are you asking learners to do?	**Learning Objective/ Outcome** What are your session goals?	**Asynchronous or Synchronous** When will you be interacting with learners?	**Time allotment** How long will the activity take?	**Activity** What are the appropriate activities to achieve the desired outcome	**Tool** What tool will support your activity?
Understand	Asthma as an atopic disorder	Asynchronous and Synchronous	20 min	• mini-write • Questioning, Open Jr learner: differential diagnosis of persistent cough Sr. learner: impact of severity of atopy in asthma presentations	File share mini-write Chat box/video for questioning

Active learning strategies for meaningful engagement

Faculty Development Support

If you have any questions about shifting your teaching approach from face-to-face to virtual or blended modalities or would like to receive one-on-one consultation, please contact The Office of Faculty Development and Educational Support.

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Med IT Support

The Educational Technology team can support you with setting up and training for asynchronous and synchronous sessions. Contact them for help with self-recording a lecture using Camtasia or Zoom (both are available to UBC Faculty), creating a sli.do poll, or setting up a discussion board topic in Piazza.

MedIT's EdTech team is also offering drop-in clinics for faculty to test Zoom as well as get instruction on how to use the tool. A drop-in will take about 10 to 15 minutes.
Clinics run daily Monday to Friday, 10 – 11am , 12 – 1pm and 2 – 3pm.
Click here within the hours posted above to join the drop-in clinic (you will immediately enter the session).

✉️   edmedia.med@ubc.ca   🌐   Click here for Med IT Zoom information & support

References

[i] Armstrong P. Vanderbilt University. *Bloom's Taxonomy.* Available from: https://cft.vanderbilt.edu/guides-sub-pages/blooms-taxonomy/ [Accessed 2020-06-20]

[ii] Pylman S, Ward A. 12 tips for effective questioning in medical education. Medical Teacher. 2020 Apr 15:1-7.

[iii] This material is borrowed and adapted from the UBC Family Practice's Faculty Development guide: Engaging Learning Activities for online sessions developed by Bill Upward.