

# ACTIVE LEARNING STRATEGIES

## Buzz Groups

A small discussion group (typically 3 – 5 individuals) formed for a specific task such as generating ideas, solving problems, or reaching a common viewpoint on a topic within a specific period of time. Large groups are often divided into buzz groups after an initial presentation in order to cover different aspects of a topic or maximize participation. Groups may appoint a spokesperson to report the results of the discussion to the larger group if time permits. Buzz groups are a form of collective brainstorming.

## Snow-Ball Discussion

Individual students think about a question or issue posed by the instructor (E.g. In your opinion, identify three key remediation strategies for global warming.) for 1-5 minutes, generating 3 reactions/comments/answers. Students then form groups of 2 and share their responses, reducing the six individual responses they brought to the discussion and coming to a consensus about their best 3 responses together. Groups then merge again and groups of 4 are formed. From the ideas brought to the new group, the 3 best are again selected. This continues until conclusions are drawn by the large group or class as a whole.

## Think-Pair-Share

Think-Pair-Share is a cooperative learning strategy that can promote and support higher-level thinking. The instructor asks students to think about a specific topic or problem individually for a short period of time. Students then pair with another colleague to discuss their thinking and, after that, share their ideas with the larger group if time permits.

## Quescussion

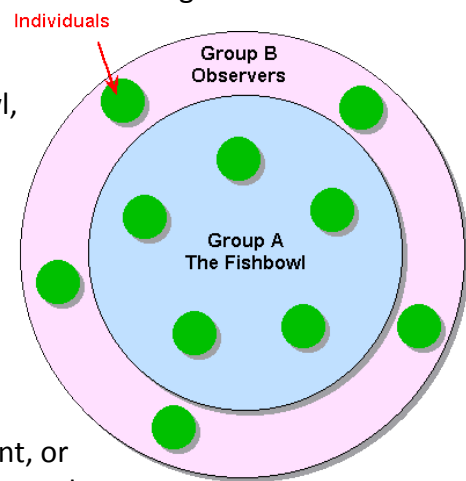
Quescussion is a type of discussion that is conducted entirely in the form of questions. The instructor begins by asking a provocative question or statement such as: "Should potential employers use Facebook as a means of gathering information about their applicants?" and students MUST respond to this prompt by shouting out questions of their own, such as 'What is the distinction between professional and personal information?' As the Quescussion proceeds, participants must wait until four (this number can vary with the size of the class) other people have spoken before they can speak again. If someone makes a statement, the rest of the class is to shout "Statement." The exercise is thus self-policing. Questions can be recorded on the board and serve as a 'map' of students' interests and can also inform future instruction.

## Fish Bowl

Fishbowls are used for dynamic group involvement. The most common configuration is an "inner ring" (Group A), which is the discussion group, surrounded by an "outer ring" (Group B), which is the observation group. Just as people observe the fish in a fishbowl, the "outer ring" observes the "inner ring".

Group A is given an assignment, such as a discussion or exercise to perform, while Group B observes. After 10 to 30 minutes, the groups exchange (Group A observes while Group B performs the activity). They can either perform the same activity, a modified version, or a new activity.

The group observing will either observe the process, the content, or both depending on the desired outcome. After the activity, you can have groups give feedback to each other, either on a group to group basis, individually, or in pairs. If you feel that the learners are not ready for public feedback, use the one-on-one or two-on-two method.



## Dotmocracy

This is a technique for voting and recognizing levels of agreement among a group of people. For example, in a group discussion, five potential strategies to dealing with a particular problem might be suggested. One means of accessing individual opinions on each of these alternatives in a non-threatening fashion is to write all of the options on large sheets of paper, and put these sheets of paper on the wall. Students are then each given a waxed paper strip with a certain number of sticky dots, and asked to walk around the room, thinking about each of the options and putting one or more dots on the approaches they most strongly agree with. At the end of the Dotmocracy period, all participants can visually assess the opinion of the group as a whole.

### **‘Tell me what you’ve heard about...’**

This is a form of brainstorming that works very well to open a topic or to act as a pre-assessment strategy for groups you are meeting for the first time. The instructor begins a session by asking, ‘Tell me what you’ve heard about...global warming; writing resumes; acing a job interview, etc...’ Responses are then collected on the board to identify common knowledge, misconceptions and/or concerns.

## Brainstorming

Brainstorming is a group creativity technique designed to generate a large number of ideas for the solution of a problem. Students are typically asked to respond verbally to a prompt by the instructor with as many ideas as possible. The ideas are often recorded on the board. There are three basic rules in brainstorming. These are intended to reduce social inhibitions among group members, stimulate idea generation, and increase overall creativity of the group.

1. Focus on quantity: This rule is a means of enhancing divergent production, aiming to facilitate problem solving through the maxim *quantity breeds quality*.
2. Withhold criticism: In brainstorming, participants should focus on extending or adding to ideas, reserving criticism for a later 'critical stage' of the process. By suspending judgment, participants will feel free to generate unusual ideas.
3. Welcome unusual ideas: To get a good and long list of ideas, unusual ideas are welcomed. They can be generated by looking from new perspectives and suspending assumptions. These new ways of thinking may provide better solutions.

## Stop-Start-Continue

The stop-start-continue technique is a means of quickly obtaining feedback from students in a non-threatening manner. It is an excellent post-assessment technique and works especially well for groups that you will encounter repeatedly (i.e. over a multi-day workshop). At the conclusion of the initial meeting with a group, you can hand-out three different colour post-it notes to each student (i.e. Red, Green & Yellow). Each colour corresponds to one of Start (Green), Stop (Red) and Continue (Yellow). Once students have the post-its, ask them to write down responses to the following questions on the appropriately coloured sheet:

What would you like me to start doing for the remainder of our meetings?

What would you like me to continue doing...

What would you like me to stop doing...

Collect the responses and review them, reporting your main findings to the group at the beginning of your next session together.

## One Minute Paper/Muddiest Point

This is another very simple post-assessment technique that can be used at the end of a lesson to assess whether students have achieved the desired outcomes and to uncover any remaining difficulties or misconceptions with the content. In this exercise, students are asked to grab a scrap piece of paper and spend 1-2 minutes responding to the following types of questions (typically you would ask any ONE of these)

*What was the key message you will take with you when leaving this session?*

*What was the most useful thing you learned today? Why?*

*In your own words, briefly define (insert key concept here).*

*What concept discussed today was most challenging for you? Why?*

*What concept discussed today would you be most worried about encountering on a future test?*

They then submit their responses to the instructor who can review them after class to gauge students' interest areas or difficulties.

## Post-It Parade

This is wonderful 'brainstorming'-esque technique that allows students who are generally reluctant to speak aloud an opportunity to share their opinions. In this activity, a series of words or statements all related to a central theme are taped on walls around the room (i.e. If the central theme is TEAMWORK, you might have words like *group*, *evaluation*, *consensus*, *workload*, and *accountability* posted). Students are then given several post-it notes (at least as many as there are words around the room) and are given 5-10 minutes to write down anything that comes to mind related to each word/statement, and stick their note on or near the relevant word. At the conclusion of this round, students are given another 5-10 minutes to walk around and peruse their colleagues' ideas. Finally, a large group discussion ensues about the themes and ideas that emerged from this activity.

## Kahoot Quiz

Kahoot is a free online tool that allows you to create and play quizzes (which we call Kahoots) using any device with a web browser. Students have 30s to respond to questions and compete with their colleagues to see who can answer the questions that fastest. Depending on the speed and accuracy of a student's responses, each student is assigned points for each question, allowing for the identification of a 'winner' at the end of each quiz. Students can play alone or in groups. Kahoot works on ANY mobile device including iPhones, Blackberries, all laptops and tablets, etc...

## **Poll Everywhere**

Free (for groups of up to 40) online software that allows you to create surveys and quizzes for your class. Students submit responses using any web browsing mobile device in real time and the aggregated 'class' response data is projected on the screen (i.e. in a class of 20, 6 students may have selected A, 12 selected B, 1 selected C and 1 selected D). Class response data can later be downloaded and stored. This software effectively turns everyone's mobile device into a 'clicker'.

## **Diagram Relay Race**

Students work in teams (3-6) to draw or complete a complex diagram on the board (i.e. components of a refrigeration system; biological cell structures). Each team member goes up to the board individually, draws a component of the diagram that they can remember, returns to the group and hands off the marker to the next member. Teams compete to see which group can correctly complete the diagram in the shortest amount of time. Alternatively, teams can complete the diagram and go around the room to review other team's drawings, looking for ways in which their home team's diagram could be improved.

## **Silent Discussion**

A question, provocative quote, idea, etc...is written up on the board. A number (i.e. 10 – 20) whiteboard markers or pieces of chalk are left up near the front of the room. Whenever they are ready, any individual can come up to the board and write or draw their response/idea to the original thought. Multiple students will be up at the board at the same time. Students are encouraged to comment on others' ideas, and come up multiple times if other thoughts emerge. Eventually, the result will be an impressive visual mind-map of numerous ideas related to the central quote. Students can then review the entire board as a large group or in smaller groups and engage in multiple follow-up activities, like identifying key themes.

## **Affective Response**

This is a reflective exercise where you are asking students to report their reactions to some facet of the course material - i.e., to provide an emotional or valuative response to the material. Obviously, this approach is limited to those subject areas in which such questions are appropriate (one should not, for instance, inquire into students' affective responses to vertebrate taxonomy). However, it can be quite a useful starting point for courses such as applied ethics, particularly as a precursor to theoretical analysis. For example, you might ask students what they think of Dr. Jack Kevorkian's activities, before presenting what various moral theorists would make of them. By having several views "on the table" before theory is presented, you can help students to see the material in context and to explore their own beliefs. It is also a good way to begin a discussion of evolutionary theory or any other scientific area where the general public often has views contrary to current scientific thinking, such as paper vs. plastic packaging or nuclear power generation.

## **Jigsaw Group Projects**

In jigsaw projects, each member of a group is asked to complete some discrete part of an assignment; when every member has completed his assigned task, the pieces can be joined together to form a finished project. For example, students in a course in African geography might be grouped and each assigned a country; individual students in the group could then be assigned to research the economy, political structure, ethnic makeup, terrain and climate, or folklore of the assigned country. When each student has completed his research, the group then reforms to complete a comprehensive report. In a chemistry course each student group could research a different form of power generation (nuclear, fossil fuel, hydroelectric, etc.). Then the groups are reformed so that each group has an expert in one form of power generation. They then tackle the difficult problem of how much emphasis should be placed on each method.

## **Pro and con grid**

The pro and con grid lists advantages and disadvantages of any issue and helps students develop analytical and evaluative skills. It also forces students to go beyond their initial reactions, search for at least two sides to the issue, and weigh the value of competing claims. Let students know how many pros and cons you expect and whether they should use point form or full sentences.

## **Formative (ungraded) quizzes**

This technique involves writing quiz questions on the board, an overhead projector, or a handout and giving students an appropriate time to respond. You may wish to collect anonymous responses, or if the question entails multiple choice, students can raise their hands in agreement as you announce each response. A quiz at the beginning of class allows you to determine how familiar students are with important terms, facts or concepts prior to the lecture, while a quiz that follows a lecture segment can reveal how well students understood the material.

## **One-minute paper or short writes**

Punctuating your class with short writing assignments is a powerful way to assess the degree to which students understand presented material. You might ask, “What was the most important thing you learned during this class?” “What questions remained unanswered?” or “Summarize the main point of today’s lecture in one sentence.”

## **Problem solving: demonstrations, proofs and stories**

Begin a lecture with a question, a paradox, an enigma, or a compelling, unfinished human story. Solving the problem, depending on what it is or in what field, may require a scientific demonstration, a mathematical proof, an economic model, the outcome of a novel’s plot, or a historical narrative. You refer back to the problem throughout the lecture, inviting students to fill in imaginative spaces in the story (or model) with their own solutions. Students fill in their successive answers passively, or the instructor elicits responses which are recorded on the board and discussed. Example questions include: “What do you think will happen?” “Which solution, outcome, or explanation makes the most sense to you?”

## **Debates**

Debates allow you to add a participatory dimension to your lecture. One strategy is to divide students according to where they happen to sit. Another approach is to ask them in advance to seat themselves in the section representing a particular side of the debate. When some students refuse to choose one side or the other, create a middle ground and invite their reasons for choosing it. Before concluding, you should ask two or three volunteers to make summary arguments for each side.

## **Role playing**

The first step in this lecture variation is to give a mini-lecture to establish the context and setting for the role playing. Then divide the class into a number of small groups of varying sizes (if you have a large class, you may have to assign duplicate roles). Each group is assigned a clearly delineated role and given a specific, concrete task – usually to propose a position and course of action. To bring closure to the topic, a debriefing exercise is necessary to help identify what students learned and make the transition to the next topic.

## **The Pause Procedure**

An extremely easy and effective approach to promoting greater student engagement with minimal modification to one's traditional lecture presentations. The pause procedure has the instructor pausing for approximately two minutes on three occasions during a fifty-minute lecture (i.e., every 12-15 minutes). During the pauses, students work in pairs to discuss and rework their notes without instructor-student interaction.

## **Have You Thought About...?**

This activity takes 30-40 minutes to complete, depending on class size. 1) Hand out index cards to each student. 2) Ask students to write a problem with which she or he would like some help. Ensure their questions is about course content (not personal). 3) Pass cards around, and have students record solutions on each card. 4) The card is returned to the originator, who now has several solutions to consider.



## **3-2-1, PLUS 1**

This is a great review activity. Create a worksheet that includes the following: 3 big ideas emerging from the content or 3 recollections, 2 lingering questions or 2 observations, 1 implication for my work or one relevance to field of study. Give students five minutes to complete the worksheet. Break students into smaller groups and have them share and discuss their responses to search for patterns. Reflect on the activity with students when they finish their small group discussion.

## **Using brief get-acquainted icebreaker activities and/or subject matter warm-ups**

Students are more likely to become excited about, as well as participate actively in, a class in which they know other students. In fact, when asked why large numbers of students typically do not pose the questions they have about complex course content to their instructors, and why relatively few students actually participate during in-class group discussions, students commonly acknowledge their hesitancy to speak and possibly embarrass themselves in front of a group of strangers. Thus, the frequent use of social icebreakers at the start of each new term, **as well as the periodic use of course-relevant brief warm-up activities in the opening minutes of class sessions**, can have great a great positive impact on reducing this formidable obstacle to in-class discussion.

## **Personal Vignette**

Given a topic or learning objective, the students are asked to relate it to their real experiences (personal or professional) by telling a brief story about it.

## **Complete Case Studies**

These are real world descriptions of problems with all accompanying data. Groups are asked to resolve the problem within a given period of time. Each group makes recommendations while the instructor acts as moderator.

## **Active Review**

After the instructor summarizes the class, students spend two-three minutes quietly thinking or reading through their notes to identify any points of confusion. They clarify any points of confusion by asking questions of one another and the instructor.