STRATEGIES FOR COOPERATIVE AND COLLABORATIVE LEARNING IN LARGE LECTURE GROUPS

The purpose of this document is to outline a range of strategies that can be used in large lectures to increase student engagement, motivation, cooperation and collaboration, and to achieve learning outcomes. These activities are designed to engage students in large group lectures, but they also work well in seminars and workshops.

The document is divided into two sections. The first section outlines easy-to-use strategies that can be completed in 5 to 20 minutes. The second section involves activities that may extend over a couple of lectures or may require ICT support.

Quick and easy strategies

These strategies are easy to design and implement.

Think–pair–share

Time: 5 to 10 minutes.

Use: Ask the group a question or pose a problem, or get students to brainstorm. (Cooperative learning.)

Method: Students work individually for a couple of minutes to work through the designated task. Under direction they then discuss the task with another student. Then call on the group as a whole to 'share' answers or ideas.

Variations:

1. **Extended think–pair–share**. As before, students work individually and then in pairs, but for sharing they join in groups of four and then groups of eight. In smaller groups this can become a whole class debate.

Notes: Think–pair–share is a useful strategy to encourage every member of the class, even shy students, to participate. It also fosters a community of learners and can help students get to know their peers.

Develop an effective argument

Time: 5 to 10 minutes

Use: Critical thinking, synthesising information and developing an academic argument. (Cooperative learning.)

Method: This is based on a 'debate' style of arguing. A debatable statement or problem with two opposed solutions is posed to the group. This issue can be linked to seminar readings. Students work in pairs where one person has been assigned the affirmative and the other the negative side of the statement.

Each person must develop a logical argument that follows the following structure:

1. *Assertion*, for example: 'I believe that'/ 'it is evident that'/ 'it is necessary that'
2. *Reason*: 'this is because'/ 'this is due to'
3. *Evidence*: 'recent research suggests that'/ 'it was stated in X that'/ 'Y argues that'

The affirmative speaker presents their argument first and then the negative speaker presents their point. Each person must then try to refute the other speaker:

4. *Response*: 'I understand that'/ 'I can see your point, but' / 'I know what you mean, but'

The pair can then discuss and reflect on how they really feel about the issue.

Back in the large group, points for the affirmative and negative can be discussed.

Variations:

1. This activity also works well in **groups of four**.
2. **Support a statement**. The lecturer poses a statement and asks students working in pairs to respond to the statement using evidence from readings, lecture notes etc. In this activity, the whole group can alternate between affirmative and negative.

Notes: Students get into the habit of supporting their arguments with academic evidence. Because students are assigned a role, they can be more critical about that stance.

One-minute paper - Individual reflection and cooperative review

Time: 1 to 5 minutes

Use: At the end of a lecture or to check comprehension. (Cooperative learning.)

Method: Ask students to note down for one minute what they understand the main point of the lecture to have been. They also write down areas of uncertainty. The students then discuss their notes with a person near them. Questions or areas of uncertainty can be posted on a discussion board.

Variations:

1. **Main points**: Students try to list three to five main points raised in the lecture. They then compare their list with others, working in small groups of no more than five students.
2. **Muddiest points:** Students write down the points that have confused them the most.
3. **Collaborative review:** Students work together to summarise the lecture in three to five points.

Notes: This is a useful strategy for students to be able to reflect on the lecture. It is also useful as a method of peer support and guidance. Linking this activity to a discussion board means students can raise their questions in a peer-led discussion moderated by a lecturer.

Six Hats of critical thinking

Time: 10 to 15 minutes

Use: To get students thinking critically about a problem or issue. (Collaborative learning.)

Method: A problem or issue is posed. Working in small groups of two to four, students think about a problem using Edward de Bono's Six Hats of critical thinking. The Six Hats are:

1. The White Hat calls for information known or needed; that is, what are the facts, or what is known about the issue?
2. The Red Hat signifies feelings, hunches and intuition; that is, how do students feel about the issue?
3. The Black Hat is judgement, the devil's advocate, or why something may not work; that is, what is wrong or flawed or open to challenges?
4. The Yellow Hat symbolises brightness and optimism; that is, what is good, what are the benefits or what works?
5. The Green Hat focuses on creativity: possibilities, alternatives and new ideas; that is, what new or innovative ideas can students come up with?
6. The Blue Hat is used to manage the thinking process. This is self-regulated learning…

Students spend several minutes discussing a problem. Wearing a particular Hat, groups can then discuss their outcomes with other groups, or groups can be called on to present their ideas for a particular coloured Hat. Students can also be asked to develop a written solution to the problem that can be collected and then summarised in the following lecture.

Variations:

1. Each person can take turns at wearing a Hat or the whole group can progress through the Hats together.

Notes: According to de Bono[1] the benefits of this approach are several: students can discuss an issue without emotions or egos; avoid making easy decisions by learning how to dig deeper; practise making creative solutions the norm; organise their ideas; and create a shared vision. Please consult de Bono's website for more information on his critical thinking strategies.

For the lecturer, this activity offers a chance to hear from different groups. This can also be used as the starting point for a group assessment.

[1] http://www.debonothinkingsystems.com/tools/6hats.htm

Graphic organisers

Time: 5 minutes

Use: To allow students to reflect on what they have learnt and to clarify gaps in knowledge. (Cooperative learning.)

Method: At the end of a lecture or a topic, provide students with a graphic organiser that has missing information. The graphic organiser can be a flow chart (processes), a branch diagram (hierarchies and categories), a mind map (ideas) or a table (relationships). Students are required to complete the graphic organisers. Working with the person next to them, they compare their organisers. Back in the large group, the lecturer can fill in the table with the students or show them the completed table.

Notes: Graphic organisers are a great way to simplify complex topics: students can see categories and sub-categories, the flow of a process or the relationships between ideas.

Students can also identify gaps in their knowledge.

Multiple choice

Time: 5 to 10 minutes

Use: To check discrete knowledge and to clarify gaps in knowledge. (Cooperative learning.)

Method: At the start of the lecture, present students with several multiple choice questions (no more than five) on the content you are going to cover, and have students discuss the answers. The use of electronic voting systems (EVS) works well here (see strategy 10 below).

At the end of the lecture, post the same multiple choice questions so that students can monitor their understanding of the lecture content.

Notes: If you are using an EVS, you will be able to quickly see if there are areas of confusion amongst the group.

Role-plays

Time: 10 to 15 minutes

Use: For engagement, to play the Devil's Advocate, kinaesthetic learning. Revision of ideas and concepts. (Collaborative learning.)

Method: Students are broken up into small groups. Each group is given a scenario where group members are assigned parts to play. (Have these written up on laminated cards so that you can re-use them.)

Notes: Have a couple of different versions of the role play – that is, give different groups different scenarios and characters to play and then get them to swap cards after five minutes. Let the students use the space in the lecture room and move around.

Celebrity heads

Time: 10 to 15 minutes

Use: Revision of key term or concepts. (Cooperative learning.)

Method: Write concepts, key words, people, and theories on cards. You will need multiple copies for each group. Divide students up into small groups of five to six students. The students sit in a circle (or the closest approximation). Each person 'sticks' or holds their card so that they cannot see it, but the rest of their group can.

One student asks 'yes' or 'no' questions to their group members, and can keep asking questions until they get a 'no' answer. Then the person next to them has a turn at asking questions. The aim is to guess the term or concept on the card.

Notes: This is an engaging activity that can be used with a range of terms. It helps students to clarify key ideas and concepts.

More challenging

These strategies may require more time to complete than the preceding strategies, or they may require the use of technology.

Problem-based learning (PBL)

Time: Two lectures minimum

Use: Students work in groups to engage with a problem that may last for several lectures.

Description: The problem works as a stimulus for students to identify what they need to know to solve the problem. (Cooperative and collaborative learning.)

Method: Students working in small groups are assigned a problem. Typically students analyse the problem and discuss their collective knowledge. Potential hypotheses or solutions are brainstormed. The group then identifies what additional information or resources are needed to test the hypothesis. The group develops a strategy or plan and members are allocated roles. A period of independent research follows. The group reconvenes to share gathered information and to test the hypothesis in light of the new information. The seven steps are:

1. Understand the situation/clarify the terminology

2. Identify the problem
3. Suggest possible causes (hypothesise)
4. Connect problems with causes
5. Decide what information is needed
6. Conduct research and obtain information
7. Apply the information

Students may then need to go through the cycle again if original hypotheses are not confirmed.

This activity may lead into an assessment.

Notes: There is a range of variations of PBL. Students must be given time to develop their plan and to reconvene in class. It is also useful to allow students to have another cycle of research and discussion.

Electronic Voting Systems (EVS)

Time: 5 to 10 minutes

Use: Students can either ask or respond to questions via an electronic voting system. EVS can be used for simple questions to check understanding or to give 'formative feedback' to both students and the lecturer. EVS can also be used for brainteasers and to initiate discussion. (Cooperative learning.)

Description: EVS can include the use of online response systems, such as Poll-Everywhere www.polleverywhere.com or ProProfs http://www.proprofs.com/polls/ . (ProProfs is free.)

Method: Create your questions before the lecture. During the lecture, ask students to access the link and respond to the questions using their mobile devices. The results are displayed instantly. This can be worked around pair work, problem solving and discussion.

Notes: These technologies are relatively easy to use. Students do not need to login so all they need is a device with Wi-Fi access.

Digital story-telling

Time: A digital story should be no more than 5 minutes in length, but may take several hours

to develop.

Use: Digital stories are a great alternative to group presentations. (Collaborative learning.)

Description: A digital story is a short movie that may combine photographs, video, animation, sound, music, text, and a narrative voice. Digital stories may be used within a lecture as an alternative to group presentations. Students work collaboratively to produce their own digital stories using flip videos, iPhones, iPads, or other mobile devices to record the story, and software such as iMovie or movie makers to edit the movie. The movies can then be uploaded to the Internet or uploaded to LEO via a discussion forum (remember to set an adequate file size for forum attachments).

Method: Students work in groups to create a digital story on a particular topic, as a scenario, a role play, or just a creative (and more interesting) presentation. Students storyboard their movie, record the movies and then edit the story. The storyboard can be discussed with tutors and/or can form part of the assessment.

Notes: A lecture is a great way to showcase the movies – everyone watches the presentations together. Research on the use of digital stories in higher education has shown that students enjoy the process and learn from the experience (especially when tied to a scaffolded assessment).

Jigsaw activities

Time: 30 to 50 minutes (minimum)

Use: Builds student expertise in a particular area. (Collaboration and cooperative learning.)

Description: There are several variations of jigsaw activities. Just as in a jigsaw puzzle, each student has a piece of information that is essential for the completion and full understanding of the final artefact, such as a patient profile, an individual education profile or an author's biography. Students work together in groups to share their knowledge with other group members. This means that every student is both an expert and a receiver of knowledge. If each student's part is essential, then each student is essential; and that is precisely what makes this strategy so effective in large groups.

Method: Two variations are presented below.

Simple Jigsaw: Students are divided into small groups of five to seven students. Each student is given a piece of information or a part to a problem, and a table to fill in. They become the expert in that area. They then have to talk to other members in the group. Each person has to share their information (expert role) while their team member listens and writes down the information (receiver). They swap roles and then check that they have recorded the information correctly. At the end of the activity each member of the group should have a completed table that records all the pieces of knowledge.

Expanded Jigsaw: This is a bit more complicated, but gets people moving. Students are assigned to a group – no more than five to six students. That group is given a piece of information or a problem that they need to work through and solve as a group (no more than five to six pieces of information). Hence, the entire group becomes experts in that area. The students then reform in new groups with people from different areas of expertise to share their information and to hear from others.

Notes: Research has shown that unless students are required to use the information in a meaningful way after the activities. For example, an assessment or group task, they will focus on developing only their area of knowledge. So, when structuring a jigsaw, think about how you will bring together all of the knowledge. Also note that if the groups become too large, students may not feel comfortable being involved, and may stay quiet or simply copy information from their peers.

Long-term lecture groups

Time: Entire semester

Use: To build a community of learners. Very good for first year undergraduates and postgraduates. (Cooperative and collaborative learning.)

Method: Students are assigned to a small group of no more than four or five students at the start of semester and are required to sit with that group and work through problems together (even to complete group assessments) over the course of the entire semester. Students can complete activities together and contact each other for help and guidance. The idea is that the students form a buddy group. The group members make sure everyone is completing their

work and provide a first point of call for support and assistance.

Notes: Students need to contact each other in the first week to set up a meeting point. A discussion forum visible only to the group could also be provided in LEO. This system works well with postgraduates that are often used to working in teams and enjoy the contact with peers. There needs to be regular occasions (i.e. weekly is better) throughout the semester where students are required to work together in lectures to ensure that the bond between the students is maintained.