



Teaching Toolkit

Tutor Induction Pack

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Notes:



Tutor Induction Pack

The aim of the pack is to provide resources for those providing tutorials, seminars and other small group activities. It is not exhaustive, but contains some key areas that will be pertinent to both new and continuing practitioners, these include

- Session plans
- Dealing with common small group problems / issues
- Methods and techniques for small and large group teaching
- Using questions more effectively
- How to ask questions that prompt critical thinking

Around each themed area you will find worksheets and activity lists, plus substantial references of original and core literature.

The Query's and Activities within this pack have been designed developmentally, and may be used by the individual to aid in reflecting and assimilating the workbook, or as potential examples to bring to their own practice.

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Further information packs are available, for information contact David.Jennings@ucd.ie

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Flexible Learning Defined

The concept of flexible learning may be applied to the way in which we deliver learning (via traditional sessions, online, open etc) and the approaches one takes to learning (strategic, deep, life-long learning etc). In reality it concerns the means and methods we must address to offer an engaging learning process set amidst ever increasing class sizes, reduced funding, new strategic directions, innovative curriculum design etc. What follows is an exploration of some of these...

What is Active Learning?

Learning is not a spectator sport. Students do not learn much just by sitting in class listening to teachers, memorizing prepackaged assignments, and spitting out answers. They must talk about what they are learning, write about it, relate it to past experiences, apply it to their daily lives. They must make what they learn part of themselves.

Arthur W. Chickering and Zelda F. Gamson

Active learning, put simply is not passive, preferably not didactic, not mere note taking etc. Ideally it provides a shift from the teacher or facilitator 'doing' to the student 'doing'. This may take any number of forms; motor or physically active, sensory / perceptually active or activated, verbal actions, cognitive activity, collaborative or co-operative engagement / activity etc.



Activity: Introductions, Relationships and Communication

Task:

Take a moment to fill out the 'Welcome Card'

Name:

School / Unit

Personal or School UR

Research Interest/s

Most enjoyable topic to teach

Two pass times / hobbies

Share it with someone you are unfamiliar with, or have yet to have a chat to...

Activity: Assessing and Evaluating the point of Activity

Query:

How may one overcome the common weaknesses in a didactic process?

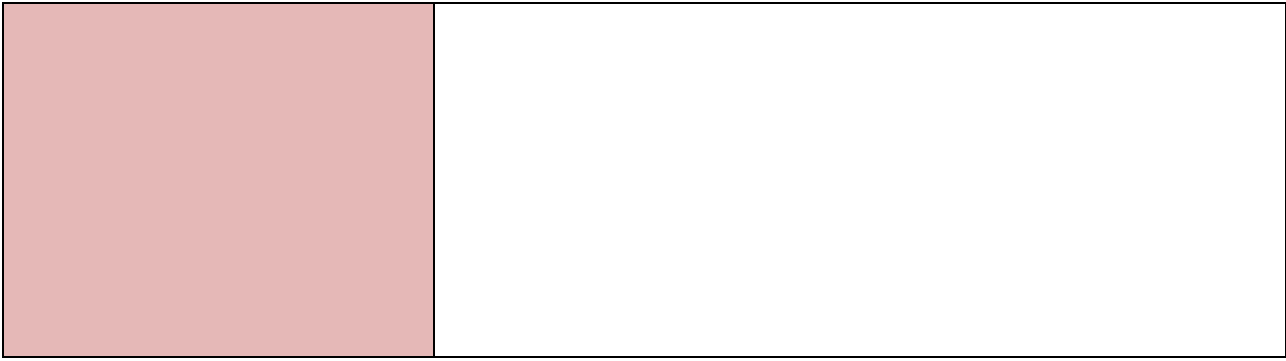
1. Saying too much too quickly
2. Assuming too much knowledge
3. No summary given
4. Time management problems
5. Not stressing major points
6. Not linking sections/lectures together
7. Using technical language too early

Task:

Suggest a number of responses to deal with the following challenges in introducing active learning in a lecture /seminar/ tutorial process

Challenge	Response
Interaction reduces the time for content delivery	

Students just want a good set of lecture notes to learn later	
The lecture is our opportunity to tell the student things	
The students will hate it and will not wish to take any part	
The students don't know enough to be able to talk about it yet	
They may end up discussing last nights football or looking at Facebook	
Won't the lecture lose clarity?	
What if they ask me things I can't answer?	
Others:	



Based on Exley et al



How we learn

Learning styles has become a somewhat contentious term used to describe the attitudes and behaviours, which 'may' determine an individual's preferred way of learning. It is the 'may' that draws attention as it is often omitted and hence the concept becomes a deterministic approach to catagorising how learners engage with information, their peers, educators and opportunities to learn. Suffice to say it is also an area where so many learning styles / preference models exist, that the marketplace is truly over-crowded (a citation search revealed over 150 articles espousing models), so where does one look to...? And how may we use them to our benefit?

If we merely take note of the range of styles and/or preferences available, we may begin to address a number of key issues that impact student interaction. The idea of learner malaise, lack of motivation, misinterpretation is not down to recalcitrant individuals alone. By adapting the way in which we teach and provide learning opportunities to reflect the potential 'learning styles' apparent in any cohort, we may begin to offer an open and engaging process that is directed to their (the learners) preferred style / method of interaction and engagement.

The following three tables elaborate the details of their respective models (Rose, Honey & Mumford and Gardener) and the interpretation of the implied learning styles on the individual.

Rose 1985

Visual: Learners prefer to learn with visual reinforcement such as charts and diagrams

Auditory: Learners prefer to learn by listening

Kinaesthetic: Learners prefer to learn through, moving, doing and touching

**Honey and Mumford 1996**

Theoretical: Learners prefer to learn by reading and listening to the experts

Pragmatic: Learners like to be able to see the practical application of theory. They like to use deductive reasoning to focus on problems and they prefer situations where there is a single correct answer or solution

Reflective: Learners tend to be imaginative and emotional. They work well in group discussions

Activist: Learners are action oriented. They learn by doing

Gardener 1993

Visual/Spatial Intelligence: Puzzle building, reading, writing, understanding charts and graphs, a good sense of direction, sketching, painting, creating visual metaphors and analogies (perhaps through the visual arts), manipulating images, constructing, fixing, designing practical objects, interpreting visual images.

Verbal/Linguistic Intelligence: Listening, speaking, writing, story telling, explaining, teaching, using humour, understanding the syntax and meaning of words, remembering information, convincing someone of their point of view, analysing language usage.

Logical/Mathematical Intelligence: Problem solving, classifying and categorising information, working with abstract concepts to figure out the relationship of each to

the other, handling long chains of reason to make local progressions, doing controlled experiments, questioning and wondering about natural events, performing complex mathematical calculations, working with geometric shapes.

Bodily/Kinaesthetic Intelligence: Dancing, physical co-ordination, sports, hands on experimentation, using body language, crafts, acting, miming, using their hands to create or build, expressing emotions through the body.

Musical/Rhythmic Intelligence: Singing, whistling, playing musical instruments, recognising tonal patterns, composing music, remembering melodies, understanding the structure and rhythm of music.

Interpersonal Intelligence: Seeing things from other perspectives (dual-perspective), listening, using empathy, understanding other people's moods and feelings, counselling, co-operating with groups, noticing people's moods, motivations and intentions, communicating both verbally and non-verbally, building trust, peaceful conflict resolution, establishing positive relations with other people.

Intrapersonal Intelligence: Recognising their own strengths and weaknesses, reflecting and analysing themselves, awareness of their inner feelings, desires and dreams, evaluating their thinking patterns, reasoning with themselves, understanding their role in relationship to others.

Task :

Take a moment to undertake one of the following online tests to assess your preferred 'learning style', are they applicable? How might you use them to inform practice?

- Myers-Briggs
<http://www.humanmetrics.com/cgi-win/JTypes2.asp>

- David Keirsey's 'Sorter' to discover one's personality type
<http://keirsey.com>

- Soloman & Felder Online test
<http://www.engr.ncsu.edu/learningstyles/ilsweb.html>

- Rose's VARK Online test
<http://www.vark-learn.com/english/page.asp?p=questionnaire>

- Honey and Mumford's 80 item questionnaire
<http://www.peterhoney.com/>

Homework, try another test and compare the two findings



Notes:



Planning Teaching Sessions in an Outcomes-based Curriculum

On the following page is an example of a teaching plan (these are sometimes called lesson plans). You may be surprised that it does not include a section on content. Many teachers still think of planning a teaching session in terms of making a list of the content to be covered; but this approach can lead to problems because it focuses on what the teacher will do without sufficient thought being given to what the students might do.

The learner-centred model of Higher Education, however, requires a clear focus on what students need to do in order to maximise their marks. It requires that teaching sessions (and courses) should be described in terms of what it is that *the students* should be able to do on completion. Statements that describe what it is the students should be able to do at the end of a session are called *intended outcomes* or **outcomes** for short.

Advisory Note 1 – Outcomes, Objectives, & Competencies

The literature related to curriculum theory contains inconsistencies in the use of the term “outcomes” and the associated terms “objectives” and “competencies”.

We recommend that the term ‘outcomes’ is always used to describe what a student should be able to do at the end of a module or course. We also recommend that the same term is used to describe what a student is able to do at the end of a lesson. If the term ‘objectives’ is used at all, it is less confusing if it is used only to describe what a student should be able to do at the end of a lesson (D’Andrea 2003).

Unfortunately, this only partly clears up the confusion because what is an outcome in one context can be an objective in another. Within any given educational context, however, an objective will describe a smaller action or smaller quantity of knowledge than an outcome. The term competencies (sometimes referred to by the synonymous term “competences”) is best used as defined by European Union’s Tuning Project, namely, as what students have when they have successfully achieved the stated outcomes of a programme of learning (Deusto University 2006).

Activity: Evaluationg and preparing session plans

Task:

Consider the following example of a teaching plan and prepare to discuss the model and its implementation.

Title: Risks to Mother	Module: Pregnancy and Early Childhood (L1 / 5 credits)	Duration: 3 hours
Aim(s): To ensure students know the causes of sudden death in pregnant or post partum women, can identify high risk patients and contribute to their care.		
Objectives: At the end of this session the student should be able to: <ul style="list-style-type: none"> • Describe the most common causes of sudden death in pregnant or post partum women. • Identify when a patient is at high risk. • Plan and manage a suitable care regime. 		
Teacher Activity		Student Activity
<p>Ask students to suggest what might be the two most common causes of sudden death in pregnant or post partum women. Write answers they call out on the whiteboard.</p> <p>Present most recent statistics including charts on overhead.</p> <p>Comment on any differences between perception and fact – ask why this might have been so.</p> <p>Ask students to identify signs and symptoms.</p> <p>Ask students to identify risk factors and how these might be checked for.</p>		<p>Individually call out answers.</p> <p>Listen and observe.</p> <p>Participate in discussion.</p> <p>Listen and answer questions if asked.</p>

<p>Set group task – examine a series of written case studies of patient care</p> <p>Manage plenary report back.</p> <p>Present Summary List as OHT and Handout</p>	<p>Ditto</p> <p>In groups examine case studies and comment on the care received</p> <p>Report judgements to plenary.</p> <p>Listen and take additional notes.</p> <p>Ask questions.</p>
<p>Resources Needed: PTT Presentation, OHT backup, handout and OHTs of statistics, copies of case studies, handout of care plans, final summary handout and OHTs.</p>	

Task :

Use the following pro-forma to draw up a plan for a teaching session that you will have to give soon. Be prepared to share this with others.

Title:	Module:	Number in Sequence:
Duration:		
Aim(s):		
Outcomes: At the end of this lesson the students should be able to:		
Teacher Activity	Student Activity	

Resources needed:	

Task: Review the posted teaching plans

Use post-it notes to indicate which plans you think are particularly well-thought out and to ask questions of the designer. In the following plenary, (a) present any responses you have to post-its on your own plan; (b) comment on what was learned from the poster session.



Definition of Small Group Teaching

The term 'small group teaching', or 'small group learning' as it is often termed, means different things to different people. Some are familiar with the tutorial as being their experience of small group teaching. The tutorial is usually linked with a series of lectures and its role is to complement the lecture. *Problem Based Learning Groups* have very specific procedures in how the information is discussed, i.e. Brain-storming and reporting back on information, often completed in a 7 step procedure.

There is no magical number that defines a group as a Small Group. A lecturer used to taking 400 in a lecture would define 50 as a small group. As there can be sub-groups within groups, it is hard to define small group. In a discussion, where participation is assessed some students may not speak up in a group that begins to get bigger than 10 participants and in addition tutors would find it hard to assess participation by individual students in groups with numbers greater than this.

Ruddok (1978), Luker (1989), Griffiths, Houston & Lazenbatt (1996) researched that students enjoyed and benefited from small groups. The tutorial in particular has been noted for its value in

- Complementing knowledge in lectures
- Expanding on the concepts considered in lectures
- Encouraging student reflection
- Developing students' communication skills
- Encouraging active life-long learning

An element, often over looked, is the role of online discussion groups in facilitating ongoing information sharing and knowledge construction. These may be used in conjunction with both the lecture and traditional tutorial, adding an added element of large to small group collaborative interaction. An

issue that arises is how one may assess and/or evaluate online participation and contribution, Creanor (2004) offers a dual guide to identifying individual elements within in contributions and their level of critical thinking and how they interact (collaborate) with the wider cohort.

Types of Online Contributions:

Individual Thinking:

- Offering up ideas or resources and inviting critique of them
- Asking challenging questions
- Articulating, explaining and supporting positions on issues
- Exploring and supporting issues by adding explanations and examples
- Reflecting on and re-evaluating personal opinions

Interactive Thinking

- Offering a critique, challenging, discussing and expanding the ideas of others
- Negotiating interpretations, definitions and meanings
- Summarising and modelling previous contributions
- Proposing actions based on ideas that have been developed

Query:

Are you aware of the synchronous and asynchronous tools available in your local VLE e.g. Blackboard?





Activity: Dealing With Common Small Group Problems / Issues

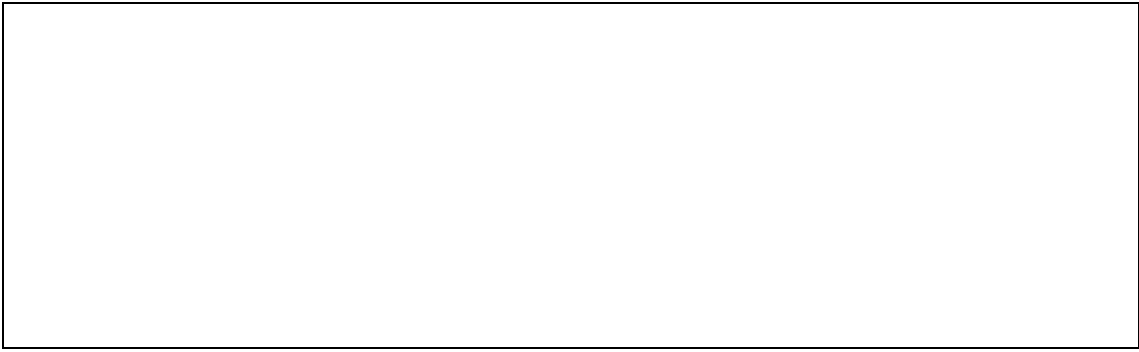
Task:

Note how you might address each of these issues, and identify any others you may have come across.

Be prepared to share your findings with the cohort

Issues with small group teaching	Potential Solutions
Goals and structure are unclear	
Lack of preparation by tutor	
Lack of preparation by learners	
Tutor talks too much (may even ask a question and then answers it him or her self)	
Lack of student participation and involvement	

Discussions tend to be at a low cognitive level (and boring!)	
Questions asked by tutors rarely go beyond eliciting recall	
Tutor asks too many questions at once, without guidance on which elements are most important	
Tutor fails to build on the answers obtained	
Discussion is unfocussed for much of the time	
One or two students are allowed to dominate the discussion	
Other Issues:	





Learning Opportunities for Active Engagement

Teaching with Primary Sources

- Hypotheticals, ask the learner 'What If' the source did not exist, it was written a year later / earlier?
- Reading Rounds, invite learners to read a text, the next learner comments and/or interprets
- Caption Gap, present a source with its caption edited out, invite new captions
- CCC, using groups of three, invite students to discuss the Context, Content and Consequence of the source materials

Teaching Abstract Concepts

- Utilise graphical representations (art, diagrams, even sculpture), invite learners to explore relationships via their own diagrams.
- Manifesto writing, invite learners to apply the theoretical to practice
- Wall of Post-its, invite learners to respond 'emotionally' and 'intellectually' discuss the divergence and its impact on the nature of the concept

Teaching with Numerical Data

- Bogus data, invite learners to identify and explain why certain data is not admissible
- Predictions, provide partial data, invite learners to interpret and extrapolate real figures
- Market Translation, invite learners to represent the 'meaning' of figures in another form

Based on Davies, 2001

Miscellaneous ideas

- Active Reading, get learners to make note of questions before reading, the task then becomes reading with an agenda. Also stress the importance of creating summaries or synopses of the texts
- Card Groups, provide groups with a focused question on a card, ask them to answer on same card
- Grafitti Puzzles, invite learners to annotate a map, diagram, image etc, and share notes with other learners
- Googlejockeying, utilise the students laptops in session, invite them to seek out information on a particular topic and present it back to their group or cohort
- PRS / Clickers, utilise handheld quiz remotes to interact with the class, gaining opinion, consensus, level of understanding etc.
- Segmented Presentations, invite learners todo a 3 minute presentation on an issue, question, theme etc, present for 1 minute, group response for 5 minutes, etc.
- SMS, (98% of students have a mobile phone), invite responses to a mobile blog or text manager
- Video, provide learners with duties (identified tasks) regarding the video, turn off the sound and ask for a commentary or narration.
- Wikis, utlising laptops, invite students to brainstorm, contribute, debate etc in an 'active' wiki

Active Notes

When our students have their heads down (in a laptop or notepad) what are they actually doing... the concept of taking notes, though fundamentally sound, is often found wanting – its adherence to a linear system does not reflect the way in which we process and interpret information. One may ask ‘do traditional notes aid forgetting not memory?’ In effect students attempt to transcribe what is being said and are merely summarising someone else’s thoughts.

In an ideal situation it would be far better if they were ‘making (creating) notes’ rather than ‘taking’ them. The very act of personalizing the process means that the individual is organizing their own thoughts, on a topic, in their own way.

The handout has become ubiquitous in teaching and learning; whether it is a series of slides (with or without notes and references), a data sheet, a bibliographic list or an actual activity plan – the issue is how to integrate it them in a session to avail of a learning opportunity, rather than have it treated as a mere set of reference points (or crib notes!).

Use of Handouts	Actively
Orientation	Invite the learner / participant to write down what they expect the session to cover (ie. Personal learning outcomes) – return to it at the end
Too much information for a slide (data sets, graphs etc)	Provide an opportunity (pose a question, invite a discussion, invite individuals to produce a graphical interpretation etc.)
Need to elaborate a concept (provision of graphics, further text, references etc)	to reflect, analyse and discuss the information presented

Add structure / deconstruct a session	Invite learners to identify potential 'issue' areas in need of further exploration
Guidance for self-study (additional notes, further reading, formative questions, etc)	Tie in the resources (by providing a task) to aid reflection and work towards assignments and / or assessment
Activity / task plan (detailed 'to do' list e.g. lab practical)	Offer a step by step activity guide, making sure to provide 'space' to record observations, queires etc
Summary	Ask the learners to synthesie the main issues of the session, perhaps as a concept map or graphical interpretation – invite them to share
As a plan for the next session	Request the learners to address the key outcomes of a session and how they may prepare to follow them for the next

Task: Memory aid

Write an explanation and/or description of learning styles

Write down two things you have learned about active lectures



Activity: Applying Flexible Teaching Approaches

Task:

Dividing into A's and B's

- A's are to read (on the following pages) from 'Silent Reflection' to and including 'Brainstorms'
- B's are to read 'Syndicates' to 'Crossovers'

You have six minutes to read, you will then turn to your (alternative) partner and explain the methods you have read in 2 minutes

The entire task will take 10 minutes only.

Methods and Techniques for Use in Small Group Teaching

Provided below are a selection of common flexible methods one may use in both large and small group teaching. Basic guidelines are provided to demonstrate how each may work in a given situation, like all such methods they are open to adaption and interpretation to suit your individual needs.

The following have been adapted from Brown (1997).

Silent Reflection

This is where you give students a few minutes to think about a problem or issue. Ask them to write down their thoughts or ideas on a note pad. Keep the task specific. For example, ask them to write down the three most important, or positive, or expensive etc. aspects of an issue. It is often useful to ask them to write on post-its and then post them on, say, a notice board or the wall. Alternatively, ask them to share their ideas with their neighbour before moving into a discussion phase. This technique suits quieter students and ensures that everyone has the opportunity to provide feedback.

Rounds

Where groups are not too large (20 or so) go around everyone in the group and ask them to respond. People often use rounds as icebreakers or as part of the winding-up of a session. Try not to make the round too daunting by giving students guidance on what is expected of them. **Keep it short.** For example try and avoid questions like *"I want everyone to give their name and then identify one aspect of the course that they know nothing about but are looking forward to learning about"*. In big rounds, students can be quite nervous, so make it clear that it's OK to pass and if people at the beginning have made your point, that concurrence is sufficient.

Three Minutes Each Way

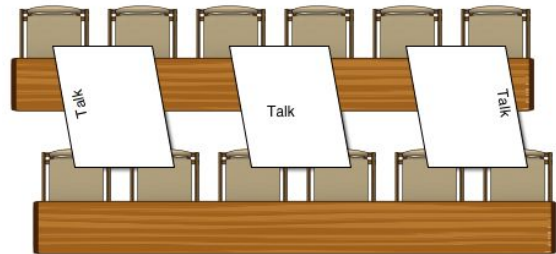
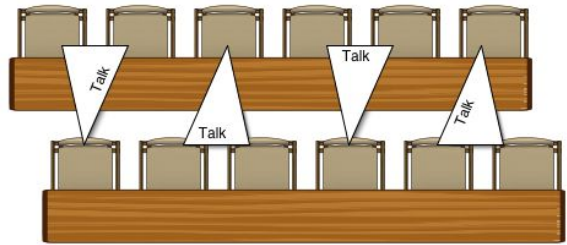
Ask students in pairs to speak for three minutes on a given topic.

Be strict with timekeeping. Your students might find this quite difficult at first, but it is an excellent way of getting students to articulate their ideas, and also means that the quieter students are given opportunities to speak and be heard. The art of listening without interrupting (other than with brief prompts to get the speaker back on target if they wander off the topic) is one that

many students will need to foster. This pair-work can then feed into other activities.

Buzz Groups

Give pairs, threes, fours or fives small timed tasks which involve them talking to each other, creating a hubbub of noise as they work. Their outcomes can then be shared with the whole group through feedback, on a flip chart sheet poster, on an overhead projector transparency or otherwise as appropriate.



Brainstorms

This can be a valuable way of stimulating creative free-thinking and is particularly useful when looking for a solution to a problem or in generating diverse ideas. Start with a question like "*How can we..?*" or "*What do we know about ... ?*" and encourage the group to call out ideas as fast as you can write them up (perhaps use two scribes on separate boards if the brainstorm flows well). Make it clear that this is supposed to be an exploratory process, establish some ground-rules in advance for example:

- A large quantity of ideas is desirable, so everyone should be encouraged to contribute at whatever level they feel comfortable.
- Quick snappy responses are more valuable at this stage than long, complex, drawn-out sentences.
- Ideas should be noted without comment, either positive or negative - no one should say "*That wouldn't work because.*" or "*That's the best idea*

we've heard yet" while the brainstorm is in progress as this might make people feel foolish about their contributions.

- Participants should 'piggyback' on each other's ideas if they set off a train of thought, 'logic circuits' should be disengaged, allowing for a freewheeling approach.

The ideas thus generated can then be used as a basis for either a further problem-solving task or a tutor exposition.

Syndicates

This is the term used to describe activities undertaken by groups of students working to a brief under their own direction. They can be asked to undertake internet or literature searches, debate an issue, explore a piece of text, prepare an argument, design an artefact or many other tasks. To achieve productively, they will need an explicit brief, appropriate resources and clear outcomes.

Specialist accommodation is not always necessary; syndicates can work in groups spread out in a large room, or, where facilities permit, go away and use other classrooms etc. If the task is substantial, the tutor may wish to move from group to group, or may be available on a 'help desk' at a central location. Outcomes may be in the form of assessed work from the group or produced at a plenary as described above.

Snowballing (Also Known As Pyramiding)

Start by giving students an individual task of a fairly simple nature such as listing features, noting questions, identifying problems, summarising the main points of their last lecture. Then ask them to work in pairs on a slightly more complex task, such as prioritising issues or suggesting strategies. Thirdly, ask them to come together in larger groups, fours or sixes for example and undertake a task involving, perhaps, synthesis, assimilation or evaluation.

Ask them to draw up guidelines, perhaps, or produce an action plan or to assess the impact of a particular course of action. They can then feed back to the whole group if required. You may also wish to try 'reverse pyramiding'!

Fishbowls

Ask for a small group of up to half a dozen or so volunteers to sit in the middle of a larger circle comprising the rest of the group. Give them a task to undertake that involves discussion, with the group around the outside acting as observers. Make the task you give the inner circle sufficiently simple in the first instance to give them the confidence to get started. This can be enhanced once students have had practice and become more confident. This method can be useful for managing students who are dominating a group, because it gives them permission to be the centre of attention for a period of time. After a suitable interval, you can ask others from the outer circle to replace them, thus giving the less vocal ones the opportunity for undisturbed "air-time". Fishbowls can also be useful ways of getting representatives from buzz groups to feed back to the whole group.

Some students will find it difficult to be the focus of all eyes and ears, so it may be necessary to avoid coercing anyone to take centre stage (although gentle prompting can be valuable). A 'tag wrestling' version can also be used, with those in the outer circle who want to join in gently tapping on the shoulder of someone in the middle they want to replace and taking over their chair and chance of talking. Alternatively it can be very effective to give the observers in the outer group a specific task to ensure active listening. For example, ask them to determine the three key issues or conclusions identified by the inner group. It is then possible to swap the groups round and ask the new inner group to evaluate the conclusions identified by the first group. Fishbowls can work well with quite large groups too.

Crossovers

Often we want to mix students up in a systematic way so they work in small groups of different compositions. You can use crossovers with large groups of students, but the following example shows how this method would work with twenty-seven students.

Prepare as many pieces of paper as you have students, marking on them A1, A2, A3, B1, B2, B3 and so on (this combination is for creating triads - groups of three). If you want to create groups of four students add A4, B4 etc. (You can do this as a header on handouts.)

When you are ready to have the students go into smaller groups, get them to group themselves with students who have the same letter as themselves: AAA, BBB, CCC and so on for one group exercise. For a second exercise, ask the students to work with people who have the same number as themselves: 111, 222, 333. A third exercise will have students in triads where none of the students can have a matching letter or number: e.g. A1, D2 F3. This will allow you to get students to crossover within groups, so they work with different people on each task in a structured way.

This technique also cuts down on the need to get a lot of feedback from the groups because each individual will act as rapporteur on the outcomes of their previous task in the last configuration. As with snowballing or pyramids, you can make the task at each stage slightly more difficult and ask for a product from the final configuration if desired. Crossovers are useful in making sure everyone in the group is active and also help to mix students outside their normal friendship, ethnic or gender groups.

It takes a little forethought to get the numbers right for the cohort you are working with (for example, you can use initial configurations of four rather than three, so that in stage two they will work as fours rather than triads). If you have one person left over, you can just pair them with one other person and ask them to shadow that person wherever they go.

Query:

Jot down one or two examples you may use / apply in your Session Plan and explain your choice.



Using Questions More Effectively



The effectiveness of questioning in teacher-student interactions can be significantly enhanced by a few basic techniques:

Pose the question first, before asking a student to respond.

- When you call on a student before posing the question, the rest of the class is less likely to listen to the question, much less formulate a response.
- Posing the question before identifying someone to respond lets students know they will be held accountable and should be prepared to answer every question.

Allow plenty of "think time" by waiting at least 7-10 seconds before expecting students to respond.

- Ask students to refrain from responding until you ask for a volunteer or identify someone. Since most teachers wait only 1-3 seconds before expecting a response, the increased wait time can seem like an eternity and feel very uncomfortable at first.
- To help students adjust to an extended wait time, use the time to repeat and rephrase the question; also suggest that students use the time to write down the responses they compose.

Make sure you give all students the opportunity to respond rather than relying on volunteers.

- Create a system to help you keep track of who you call on so you can ensure that all students have equal opportunities to contribute.
- If you call on a student who is not ready to respond or does not know the answer, allow the student to "pass" and then give her/him another opportunity later.

Hold students accountable by expecting, requiring and facilitating their participation and contributions.

- **Never** answer your own questions! If the students know you will give them the answers after a few seconds of silence anyway, what is their incentive?
- Don't be too ready to accept "I don't know" for an answer. Allow additional think time, if necessary, by moving on and then coming back to the student for a response later. Alternatively, have a simpler alternative question ready.
- Offer hints or suggestions to guide students in formulating quality responses.
- If a student is unable or unwilling to formulate a response, then offer two or more options and let the student choose one.

Establish a safe atmosphere for risk taking by guiding students in the process of learning from their mistakes.

- **Always** "dignify" incorrect responses by saying something positive about students' efforts; public embarrassment only confirms apprehensions about class participation.

-
- Remember to give positive Non-Verbal Signals.
 - When students make mistakes, build their confidence and trust by asking follow-up questions designed to help them self-correct and achieve success.
 - Admit your own mistakes and "think aloud" examples of a reflection process that demonstrates increased awareness, new insights, concept clarification, etc.

Adapted from The Centre for Teaching Excellence, St Edward's University,
Austin Texas, Available at <http://www.stedwards.edu/cte>

Query:

Jot down one or two examples you may use / apply in your Session Plan

How to Ask Questions that Prompt Critical Thinking

1. Avoid questions that have an easy one-dimensional answer.
2. Plan your questions in **advance**, utilize Bloom's Taxonomy to identify whether they are likely to prompt, "higher order thinking".

Bloom's Revised Taxonomy of Cognitive Processes.

6. Creation / Synthesis: the ability to put facts together into a coherent whole, or, creatively achieve a new understanding by linking facts together
5. Evaluation: the ability to make judgements using criteria and standards
4. Analysis: ability to determine internal relationships
3. Application: the ability to apply what is learned to a new situation
2. Comprehension: the ability to interpret information in one's own words
1. Knowledge: the ability to recall facts, opinions and concepts

From: Anderson et al (2001)

Example Question Constructs

1. Knowledge

Exhibits previously learned material by recalling facts, terms, basic concepts and answers.

What is . . . ?

When did ____ happen?

How would you explain . . . ?

Why did . . . ?

How would you describe . . . ?

How would you show... ?

Can you select... ?

Who were the main . . . ?

Can you list three ... ?

Who was . . . ?



2: Comprehension

Demonstrating understanding of facts and ideas by organising, comparing, translating, interpreting, giving descriptions and stating main ideas.

How would you compare . . . ? contrast.. ?

Explain in your own words . . . ?

What facts or ideas show . . . ?

What evidence is there that...?

Explain what happened what is meant. ..?

3: Application

Solving problems by applying acquired knowledge, facts, techniques and rules in a different way.

What examples can you find to . . . ?

How would you show your understanding of. .. ?

What approach would you use to ... ?

What might have happened if. . . ?

4: Analysis

Examining and breaking information into parts by identifying motives or causes; making inferences and finding evidence to support generalisations.

What inference can you make from. . . ?

How would you classify . . . ?

How would you categorize . . . ?

Can you identify the difference parts... ?

What is the relationship between . . . ?

What is the function of. . . ?

Can you make a distinction between . . . ?

6: Evaluation

Presenting and defending opinions by making judgments about information, validity of ideas or quality of work based on a set of criteria.

How would you compare?

Which do you think is better....?

What was the value or importance of in?

What would you have recommended if you had been?

How would you rate the influence of on the outcome of?

How would you defend the actions of..... citing authorities?

How would you justify . . . ?

How would you explain . . . ?

How would you support the view . . . ?

5: Creation / Synthesis:

Compiling information together in a different way by combining elements in a new pattern or proposing alternative solutions.

What might have happened if... ?

Can you propose an alternative interpretation to that of ?

Is there a marmite solution¹ here?

Task :

Homework: prepare some questions for your next session / class designed to elicit the particular responses as per Bloom

De Bono's lateral thinking http://findarticles.com/p/articles/mi_qn4158/is_19991219/ai_n14266074/

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Notes:

End of Workbook