The best kind of teacher is one who helps you do what you couldn’t do yourself, but doesn’t do it for you’ (Child, Aged 8).
TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>3</td>
</tr>
<tr>
<td>Set Induction and Closure</td>
<td>16</td>
</tr>
<tr>
<td>Questioning Skills</td>
<td>25</td>
</tr>
<tr>
<td>Explaining Skills</td>
<td>31</td>
</tr>
<tr>
<td>Stimulus Variation: ‘...the skill of varying the stimulus.’</td>
<td>37</td>
</tr>
<tr>
<td>Assessment in Higher Education</td>
<td>43</td>
</tr>
<tr>
<td>Forms of Assessment</td>
<td>44</td>
</tr>
<tr>
<td>Managing the Assessment Workload</td>
<td>49</td>
</tr>
<tr>
<td>Evaluating Teaching</td>
<td>55</td>
</tr>
</tbody>
</table>

TABLE OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Figure 1:</td>
<td><strong>Bloom’s Taxonomy of Educational Objectives, 1956</strong></td>
<td>4</td>
</tr>
<tr>
<td>Figure 2:</td>
<td><strong>Bloom’s Taxonomy and Associated Verbs</strong></td>
<td>9</td>
</tr>
<tr>
<td>Figure 3:</td>
<td><strong>Giving a Lecture: from Presenting to Teaching</strong></td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>By Dr. Kate Exley and Reg Dennick (2004)</td>
<td></td>
</tr>
<tr>
<td>Figure 4:</td>
<td><strong>A Summary of Strategies To Engage Students in Large Groups</strong></td>
<td>23</td>
</tr>
<tr>
<td>Figure 5:</td>
<td><strong>Student-centred Interactive Activities</strong></td>
<td>38</td>
</tr>
<tr>
<td>Figure 6:</td>
<td><strong>Teaching Evaluation Schedule: An Example</strong></td>
<td>53</td>
</tr>
</tbody>
</table>
Introduction

This Online Resource is designed primarily for those members of staff of the Dundalk Institute of Technology who play a significant role in learning and teaching, though staff who work in other areas are also most welcome to use it.

The Resource has four main purposes, as follows: to highlight and emphasise the importance and value of self-evaluation and reflective practice; to provide criteria that will help accomplish this; to highlight the essential components of effective teaching, so that colleagues might validate their own teaching effectiveness; and provide new insights on practice, and student-centred learning in particular.

‘Reflecting on what we as individuals truly want to achieve in our job is an important starting point for identifying personal and professional development needs [but] reflecting on our actions is not easy. It requires a willingness to be open and honest, and a readiness to be self critical, and to be prepared to ask the questions:

   How am I doing?
   How have I done?’

(Scottish Curriculum Council, 1996, p.25)

However,

   If people simply reflect on their own, there will be no significant change.

   (Boyd, 1995)

With these points in mind, the Resource therefore elaborates on:

   • Thoughtful planning, including the use of learning outcomes
   • Interactive teaching
   • Essential Skills, including set induction, closure, questioning and explaining
Thoughtful planning is without doubt a singularly important pre-requisite of effective teaching. As the old adage states, ‘Well begun is half done’. In particular, good planning must address matters such as selecting the most appropriate content and resources, as well as deciding on how best to manage one’s time, which teaching and assessment strategies to use and, often overlooked, the assessment and management of risk, for which certain criteria should always be in place. A most important, if not central, consideration is learning outcomes.

Learning Outcomes

Learning outcomes have received much emphasis in recent years, and as Kennedy (2007) explains, ‘The Bologna Process specifies that by 2010, all programmes…in third level institutions throughout the European Union will be written in terms of learning outcomes’ (p. 10). But what are learning outcomes and why use them?

Learning outcomes are:

‘…statements of what…the student will be able to do as a result of a learning activity’.

(Jenkins and Unwin, 2001)

They are used, therefore, to:

- Indicate the learning that should occur during class, by the end of a module and Programme of Study, and to
- Constructively align teaching and assessment strategies in order to advance knowledge and understanding.
Advantages for students include clarity of purpose, structured content, the assessment of understanding and, crucially, active learning. In other words, learning outcomes are regarded as a vehicle for promoting student-centred learning.

Given their importance, therefore, every learning outcome must be written with care, integrated into daily teaching in an effective, student-centred manner and used primarily for the assessment of student understanding.

When writing learning outcomes, it is helpful to use as guidance the ‘Taxonomy of Educational Objectives’, published in 1956 by Benjamin Bloom, the distinguished American academic.

The Taxonomy, first and foremost, is a classification system in which learning is hierarchically organised, in the sense that the learner must be successful at each level in order to proceed to the level or levels above.

The Taxonomy has three domains, the Cognitive, Affective and Psychomotor, of which the Cognitive is probably the most widely used in higher education at the present time.

The levels which constitute the Cognitive domain are set out in the diagram below.

Figure 1: Bloom's Taxonomy of Educational Objectives (1956)
As can be seen, there are six levels, ranging from Knowledge, the lowest, to Evaluation, regarded by Bloom as the highest.

At the first level (Knowledge), an ability to memorise and recall information, largely factual, would be evident. Overall, there is knowledge of main aspects of the subject matter. Active verbs that may be used to assess Knowledge are:

- recall
- define
- identify
- label
- recognise
- write
- repeat
- relate
- match
- describe

At the next level, Comprehension may be defined as the ability to show that knowledge has been understood, meanings grasped. Thus, a student is able to translate new information to a new context, make predictions or reach conclusions. There is an ability to infer, restate, summarise and discuss.

Application is the ability to apply knowledge, including theories and concepts or new information, and to experiment, and classify as well as:

- modify
- exemplify
- organise
- dramatise
- select
- sketch
- explain
- complete
- use
- compute
- operate
- practise
- demonstrate
- manipulate

In comprehension, the emphasis is on the grasp of the meaning and intent of the material. In application, it is on remembering and bringing to bear upon given material the appropriate generalisations or principles (Bloom, 1956).

Analysis is the ability to identify, breakdown and differentiate between individual parts and to show relationships between them. One is able to:
At the next level, **Synthesis** refers to the ability to combine knowledge from different areas or perspectives to produce something new, modify something that already exists or generalise from information to hand. Logical deduction, creativity, the discovery of patterns and relationships and structures are apparent at this level. Active verbs associated with this level are:

- synthesise
- modify
- create
- design
- generalise
- reconstruct
- compose
- organise
- manage

**Evaluation**, the highest level, is the ability to make judgements about the value of something, using relevant criteria. Decisions and choices are made using reasoned argument, logic and rational judgement. “The judgements may be either quantitative or qualitative and the criteria may be either those determined by the student or those which are given to him’ (Bloom, p. 45). Thus, applying criteria to test judgements and validity (of theories, concepts and ideas) are all aspects of Evaluation. Verbs associated with this level are:

- evaluate
- support
- verify
- generalise
- assess
- argue
- compare
- contrast
- judge
- appraise

(Overlap between levels may occur)

For an extensive list of active verbs, please see Figure 2 below.

As well as ensuring that one is using appropriate verbs, it is also important, when writing learning outcomes, to confirm that they are ‘SMART’, that is:

- **Specific**
- **Measurable**
- **Attainable**
Realistic

Time-bound

In addition:

…they must be simply and clearly described and must be capable of being validly assessed.

(Kennedy, 2007, p. 40)

Each outcome should have an active verb, followed by an object of the verb, followed by a phrase giving its context, as in:

The student should be able to differentiate between the different levels of Bloom’s Cognitive domain when planning a Teaching Scheme of Work.

The student should be able to apply Bloom’s higher levels of the Cognitive domain in formulating a set of higher order questions.

Other points to bear in mind when writing learning outcomes are:

• Develop each outcome using the different levels within Bloom’s Taxonomy.
• Use only one verb for each learning outcome.
• Determine, at the planning stage, how each will be assessed.
• Restrict your outcomes to those that are essential.
• Plan content in keeping with the decisions made concerning this.
• Share outcomes with students at every level (Programme, module, in teaching).
• Produce Module Handbooks and use other methods of communication to explain to students what learning outcomes are.
• Ensure that the outcomes are realistic and can therefore be achieved within the time and resources available.
• Write outcomes which are specific rather than broad. If they are not
specific enough, it will prove difficult to assess them effectively.

- Apply Bloom’s higher categories (Application, Analysis, Synthesis and Evaluation) in order to provide students with opportunities for deep learning.
- Avoid vague terms such as ‘know’, ‘understand’, ‘learn’.
- Ensure that your outcomes, teaching strategies and assessment strategies are constructively aligned.

(After Kennedy, 2007)

- ‘Constructive alignment has two aspects. The ‘constructive’ aspect refers to the idea that students construct meaning through relevant learning activities. That is, meaning is not something imparted or transmitted from teacher to learner, but is something learners have to create for themselves.

- The alignment aspect refers to what the teacher does, which is to set up a learning environment that supports the learning activities appropriate to achieving the desired learning outcomes. The key is that the components in the teaching system, especially the teaching methods used and the assessment tasks, are aligned to the learning activities and assumed in the intended outcomes’ (Biggs, 2003, p.1).

Further Reading:
http://www.engsc.ac.uk/er/theory/constructive_alignment.asp
<table>
<thead>
<tr>
<th>LEVEL</th>
<th>Appropriate Verbs</th>
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<tr>
<td>KNOWLEDGE</td>
<td>list define label</td>
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<tr>
<td></td>
<td>recognise identify repeat</td>
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<tr>
<td></td>
<td>relate match memorise</td>
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<td></td>
<td>recall state</td>
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<td>COMPREHENSION</td>
<td>summarise translate restate</td>
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<td></td>
<td>discuss assimilate communicate</td>
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<td></td>
<td>interpret extrapolate</td>
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<tr>
<td>APPLICATION</td>
<td>experiment clarify modify</td>
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<td></td>
<td>sketch dramatise use</td>
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<td></td>
<td>operate practise find</td>
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<td>choose select explain how</td>
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<tr>
<td></td>
<td>discuss exemplify grasp</td>
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<tr>
<td>ANALYSIS</td>
<td>analyse compare contrast</td>
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<td></td>
<td>categorise infer test</td>
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<td>criticise distinguish recognise</td>
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<td>examine select conclude</td>
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<td>categorise differentiate</td>
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<td>EVALUATION</td>
<td>evaluate support verify</td>
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<td></td>
<td>assess generalise argue</td>
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<td></td>
<td>compare contrast appraise</td>
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<td></td>
<td>judge</td>
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<tr>
<td>SYNTHESIS</td>
<td>synthesise modify create</td>
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<td></td>
<td>compare design generalise</td>
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<tr>
<td></td>
<td>reconstruct organise manage</td>
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</table>
Information on Bloom’s Affective and Psychomotor Domains are now provided in the PowerPoint presentation [here](#).
Other Aspects of Planning for Teaching

Whilst, however, learning outcomes are clearly important, nevertheless, they are only one aspect of the planning process. Other considerations are:

- Content coverage
- The organisation and sequencing of materials
- Balancing tutor and student activity
- Classroom (formative) Assessment
- Constructive alignment

Timing each element of the lesson as planned is a further ingredient of effectiveness, but even the best of plans can go awry. When this occurs, often the response is to speed teaching up, but in the context of student-centred learning this will most likely detract from the overall effectiveness of using this approach. It may prove more effective, therefore, while planning subsequent classes, to reduce the number of outcomes and the amount of subject content.

Before planning is complete, however, it will also be essential to consider:

- How you are going to build on previous learning and previous outcomes
- How well aligned are your outcomes with your strategies for teaching and assessment
- How you will ensure that learning is deep and active
- How you will engage students in self-assessment
- The graduate qualities and skills you wish to develop
- The resources that will be needed
- How you will evaluate your teaching
- How and when assessment of understanding will occur

Concerning the latter point, assessment of understanding is a critical aspect of student-centred learning. However, it is not something that should be
carried out by the teacher acting alone. Students, too, must be involved and so it is important to plan strategies that will help accomplish this.

Closure is a particularly valuable strategy in this regard, and is of two kinds, transitional and final, though the latter is much more frequently used than the former.

Transitional closures are used at strategically well-timed moments during teaching to assess understanding with reference to the set learning outcomes, while final closure occurs at the end of teaching, once again to assess understanding, rather than simply go over content already covered.

It is important, however, to plan carefully for closure by ensuring that sufficient time is allocated towards developing this strategy as a formative, student-centred activity. In some cases, especially when the learning outcomes are particularly challenging, closure would continue until the teacher is well-satisfied that understanding has been widely achieved.

A very good model for accommodating such strategies, is Petty’s (2004) ‘PAR’ model of teaching, which not only includes a review of learning/understanding phase but advocates, overall, both active learning and interactive teaching.

The ‘PAR’ model of teaching has three elements, as follows: Presentation, Application and Review.

The Presentation phase might consist of a short lecture and or demonstration. It is then followed by the Application phase during which content is applied (active learning takes place). During the Review phase, learning and understanding are assessed. This is the point at which learning outcomes are reviewed, and should they have occurred, misunderstandings would also be addressed and rectified.

However, because the format of the model may be altered, a teaching session
could begin with a Review, followed by Application and then the Presentation. In other words, the different stages of the model do not have to be followed prescriptively.

For planning purposes, the duration of time allocated to each element of the model would depend on the learning outcomes and whether or not, for example, there was work of an intensely practical nature, such as a laboratory experiment or similar practical activities.

In a one hour class teaching session, therefore, it would not be entirely out of place to allocate an equal proportion of time to each part of the model. At both the Application and Review phases, various activities may be used to promote engagement and interaction, including: ‘Think-Pair-Share’, small group work, role play, problem-solving, peer teaching or demonstrations, which may be conducted by students as well as their teacher.

‘Think-Pair-Share’ involves asking each person in the class, say, to write down some responses to a question or discussion point. Pairs then join together, comparing their points of view, which may then be shared with the whole class. This simple yet effective strategy should prove helpful especially for those who find whole-class interaction difficult.

Those who advocate interactive teaching are aware however of the criticisms often levelled against it, as the following (Figure 3) shows. The counter-arguments are also noteworthy.
<table>
<thead>
<tr>
<th>Challenge</th>
<th>Response</th>
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<tbody>
<tr>
<td>'Interaction reduces the time for content delivery'</td>
<td>Most lectures are overloaded and reducing input may be helpful and actually increase learning.</td>
</tr>
<tr>
<td>'Students just want a good set of lecture notes to learn later'</td>
<td>Interactivity does not preclude this and the lecturer can still provide clear and structured lecture notes.</td>
</tr>
<tr>
<td>'The lecture is where we tell the students things'</td>
<td>Using interaction will let you know that the students will have heard and understood what you have told them.</td>
</tr>
<tr>
<td>'The student will hate it and won't take part'</td>
<td>The teaching approach will need to be explained and the activities justified in terms of the intended learning goals.</td>
</tr>
<tr>
<td>'The students won't know enough to be able to talk about it yet'</td>
<td>The choice of learning task is crucial – talking about it may not be appropriate, but applying a new concept might.</td>
</tr>
<tr>
<td>'What if they ask me things I can't answer'</td>
<td>Good – it shows they are thinking- and this is not a personal challenge; students can be referred to other sources and topics can be visited in later sessions or via course VLEs.</td>
</tr>
<tr>
<td>'They might just be discussing last night’s football'</td>
<td>Give a clear focus, timescale and endpoint to the task and move around the classroom to monitor activities and very few students will wander off course.</td>
</tr>
<tr>
<td>'Won’t the lecture just lose clarity'</td>
<td>As with the didactic lecture a clear structure is needed, the map should be shared with the students at the outset and a balance should be maintained between input and interaction</td>
</tr>
</tbody>
</table>

Figure 3: Giving a Lecture: from Presenting to Teaching by Dr. Kate Exley and Reg Dennick (2004)

Further Reading:

http://trc.virginia.edu/Publications/Teaching_Concerns/Fall_2004/TC_Fall_2004_Reilly.htm
Set Induction and Closure

‘In relation to social interaction, the induction of an appropriate set can be defined as the initial strategy employed to establish a frame of reference, deliberately designed to facilitate the development of a communication link between the expectations of the participants and the realities of the situation’ (Hargie et al., 2004, p. 261).

In the context of teaching, set induction is therefore used at the beginning of a class so as to prepare students for optimum content assimilation.

Set Induction has 5 main purposes:

- To gain attention
- To arouse motivation
- To assess understanding of prior learning
- To provide an overview of content that will follow
  (NB: using advanced organisers or concept mapping (Buzan) may prove useful)
- To determine the expectations of participants

There are 4 key components of SET INDUCTION, as follows:

Perceptual, cognitive, motivational and social:
Perceptual Set
Perceptual set refers to initial or first impressions and their impact on the perceiver:

‘The initial perceptions received in social situations undoubtedly influence the expectations of participants’ (Hargie, p.263).

If perceptions are positive, then favourable outcomes should occur; if not, then the opposite may apply. In teaching situations, students are therefore more likely to engage with teachers whom they see as enthusiastic and committed than with those who are not. Moreover, engagement is also more likely to occur in a spacious and comfortable environment, though it is acknowledged that in this aspect of their work, teachers have little say:

‘When an individual enters a room for the first time, the layout of the tables, chairs and other furnishings is translated into a set of expectations about the format of the interaction to follow’ (Hargie, p.263).

Cognitive Set: This set recognises the need for structure and underlines the importance of mentally preparing the individual to assimilate new content and or new experiences.

In the context of student centred learning and teaching, the following strategies would emanate from this set:

- Clearly setting out learning outcomes and content sequencing.
- Explaining the relationship between prior and new learning.
- Explaining expectations and how learning outcomes are to be met.
- Asking students if they have any additional expectations.
- Incorporating these into teaching.

By linking prior and new content together, essentially one is attempting to consolidate content relevance and sequencing, so that students might better
appreciate the continuity, conceptual or other, one is trying to establish at subject level.

Cognitive set is therefore a: ‘… process of informing participants where they have been, what stage they are now at, and where they are going. This involves five main components, namely providing prior instructions, reviewing previous information, ascertaining expectations, outlining functions and goal setting’ (Hargie, p. 272).

Advanced organisers (Ausubel), spider diagrams and concept mapping (Buzan) are all strategies used to enhance cognitive set.

**Motivational Set**

The way individuals perceive and assimilate information is affected by their initial motivation to attend (Hargie, p. 270).

If, therefore, students are immediately attracted by the manner in which a topic is introduced – for example, the enthusiasm of their tutor, his/her opening strategy or emphasis on relevance and enjoyment – then attention and motivation should increase automatically.

Race (2005) has identified five factors underpinning successful learning, one of which, intrinsic motivation, is characterised by an inner desire or personal ‘wanting to learn’, as well as:

- Needing to Learn: ‘taking ownership’
- Learning by Doing: ‘experiential learning’
- Learning through feedback: praise and confirmation
- Making sense of things: ‘digesting’

(p.26)

Motivational set is enhanced through effective stimulus variation, including:

1. Novel stimuli such as audio-visual/multi-sensory media
2. An intriguing problem: case histories, problem solving

3. A provocative but not insensitive statement: ‘Did you know that 80% of students…’

4. Behaviour change, for example: students teaching each other; tutor working in groups with students; tutor engaging in role play. In other words, behaviours that might not usually happen.

Social Set

Social set creates an environment in which others are helped to feel at ease and are valued. A warm greeting, pleasant exchanges or humour, all ‘serve to humanise the encounter, and often facilitate achievement of the core task objectives’ (Hargie, p. 266). Without social set, therefore, in a sense all the other sets may become irrelevant.

Closure, too, has four elements, namely: cognitive, perceptual, motivational and social.

Cognitive closure refers to a synthesis of main points and checking that they have been understood. Tutor and students, both, summarise during cognitive closure.

Perceptual closure: It is evident and clear to all concerned that closure is about to occur. Applied to teaching, perceptual closure would take place when students are explicitly made aware that a specific aspect of content is ending and a new one is about to begin, for example:

I am now going to move on to the next part of the presentation, which will deal with (a) and (b).

At this point, student attention to the next learning episode should be greater.

Social closure involves socially reinforcing what has been achieved and or covered during an interaction. Reinforcement may either be ‘task related’ or ‘non-task related’, for example: ‘You all worked hard today to complete the task, thanks for doing so; contact me later if you have any further queries or questions’ (examples of task-related statements); ‘I look forward to seeing you next week, have a safe journey’ (non-task related statement).
Motivational closure seeks to stimulate ongoing engagement. In teaching, the use of motivating statements drawing attention to new/additional/useful sources, or to follow-up exercises aimed at reinforcing learning, are examples.

Bringing the session to an end using a memorable statement, finding or quotation also achieves effective motivational closure. Simply by emphasising the value of content, a tutor also achieves motivational set: ‘Today’s content will help you to see how…” OR: ‘Now that you are able to apply X to Y, please prepare for our next class by…”

These principles are now applied, for illustration purposes, to large group teaching.

Applying set induction and closure

Teaching a large group is a considerable undertaking for any teacher, and even the most experienced may find it an enormous challenge. For students, the value of a lecture or similar form of presentation is diminished greatly when they:

- have difficulty in hearing and seeing the presenter
- are unclear as to purpose and relevance
- are unable to see connections with previous inputs (often made by different staff)
- consider that too much is being covered too quickly
- are unable to participate (ask questions, make comment, ask for clarification): in other words, there is no active learning.

Thus, a good presentation should have a clear structure and ‘SMART’ learning outcomes, be logically sequenced and timed, and, crucially, as interactive as possible.

Attributes of an effective presentation therefore include:
At the beginning (Cognitive Set):

- Welcoming your audience, while ensuring you can be seen and heard
- Providing a visual overview of the learning outcomes and content
- Providing opportunities for their clarification
- Explaining how new content will build on previous content
- Assessing prior knowledge and understanding
- Stressing purpose, relevance and value (a high priority)
- Explaining key terminology

{It is important, however, to time this element of the presentation exceptionally well.}

During the presentation:

- Using stimulus variation/motivational stimuli to engender interest
- Clearly indicating new content as it is introduced:
  
  We will now consider (state aspect to be examined), Or
  
  I am going to end that section but before doing so I will…
  
  (opportunities are then provided for discussion/questions)

- Inviting students to confirm what they are learning, and/or self-assess the relevance of this new area: transitional closure

- Selectively building on student self-assessment of content in order to consolidate learning

- Prioritising content by clearly indicating the importance of each new
area/encouraging students to do this as well: ‘This is important because…’
‘Could anyone explain why this is important?’

- Alerting students to more difficult/complex areas of content by using forms of wording explicitly to emphasise what these are:
  You will find, when dealing with this aspect, that (X and Y) are more complex than…. Let’s consider why. Would anyone like to suggest why?

- Testing assumptions about these levels (pre-determined) of complexity: exactly how complex are they?

- Explaining why they are complex (‘This is difficult because…’)
  (Teachers who do this are highly regarded by their students)

- Providing, where relevant, student-centred interactive activities (see Figure 4 below)

- Promoting student self-assessment (small group discussion, paired work etc.) and peer learning

- Accommodating diversity within the student body

At the end (Closure):

- Leaving adequate time to summarise (understanding is assessed/learning is consolidated: final closure occurs)

- Involving students in summarising, or asking questions, or providing comment. Often it is the latter, more than the request or invitation to ask a question, that can prove more appealing
• Reminding students of further reading on the topic; clarifying how lecture content is linked to next input

• Setting specific tasks for follow-up work: developing responsibility and independence in relation to this (for example, preparing for the next class)

• Obtaining feedback

• Briefly saying what the next class will be about and why

• Reinforcing purpose, value and usefulness/encouraging students to assess this for themselves

• Thanking students for attending

Throughout, students and tutor engage with each other. Time is built in for each to reflect on learning. There are opportunities to receive content, apply it and then assess how well it has been understood. ‘SMART” learning outcomes and effective time management are therefore essential, as is avoidance of:

• Too much teacher talk
• Too much content
• Speaking too rapidly/monotonously
• Incoherent content sequencing
• Vague/irrelevant responding to student answers, comments, queries
• Complex/overly technical language
• Too many closed questions
Figure 4: A Summary of Strategies to Engage Students in Large Groups

1. At the beginning, explain that you will introduce some short exercises as class progresses.

2. Ask students to summarise content of previous lecture – verbally, in writing or through a mind map. Monitor outcomes. Check your own assumptions about prior learning.

3. After 8-10 minutes, ask students to pair up with each other and agree main points you have covered up to that moment. Identify gaps in understanding, then teach accordingly.

4. Build in thinking time, asking students to reflect on material covered and while doing so to consider its relevance to a specified aspect of the course, theme or topic.

5. Set a problem – ask for its solution. Mini problems will be more suitable when time is short. Asking students to hypothesise/make a prediction should enhance interest.

6. Write up part of an equation or problem then ask for it to be completed. Students may work independently to begin with, then pair up with each other or form small groups to discuss solutions.

7. Introduce quizzes – these can be constructive when their content is directly relevant to your class input.

8. Ask questions that are both probing and have high content relevance. See examples in later section on Questioning Skills. Pre-prepare some sample questions, engage students in discussion.

9. Present case studies, providing students with specific questions that should be answered within a clearly defined timescale before class ends.

10. If it is possible to problem-solve in more ways than one, provide opportunities challenging students to do this.

11. Incorporate demonstrations into your presentation. Role plays and debates may also be used.
Questioning Skills

Questioning forms a vital part of teaching and learning and is especially important in promoting discussion, interaction and critical thinking during class.

There are two main types of questions, open-process and closed. While the former is used to promote discussion and critical thinking, the latter helps to develop factual recall (cognitive set) and remembering.

Closed questions are also considered beneficial in encouraging all learners to respond.

Open questions correspond to the higher levels of Bloom’s Taxonomy (see examples below), and are necessary if the number of closed questions is to be reduced. Open, or higher order, questions may be pre-planned. This is a useful strategy in promoting deep as opposed to surface learning.

Hargie et al. (2004) refer to two types of sequencing during questioning, ‘funnel sequencing’ (open-to-closed) and ‘inverted funnel sequencing’ (closed-to-open). The former is considered useful when the questioner wishes to begin by addressing broader issues in an open manner before gradually addressing more factual ones.

In comparison, inverted funnel sequencing begins with closed questions, gradually expanding out into a more open questioning strategy. Being an inclusive strategy, this approach should help stimulate participation at an early stage in proceedings while improving confidence across the student group.

Open questions used to probe student thinking may be classified as follows:

- Questions seeking clarification: ‘Could anyone clarify what this
means?’

• Questions asking for accuracy: ‘Just think about your answer. Are you sure about what you have said? Are others in agreement?’

• Questions eliciting examples: ‘What examples could be given?’

• Questions asking for relevance: ‘What are your reasons?’

• Questions extending thinking: ‘What else could be added?’

• Questions developing justification: ‘What reasons/facts support that?’

• Questions seeking consensus (whole-class): ‘Who agrees with this and why?’

• Questions prioritising/categorising: ‘What is the most important factor…cause…explanation of …?’

• Questions that ask for summarising: ‘How would you summarise our discussion so far?’ ‘What are the 5 most important points made so far?’

• Hypothetical questions are a further example of probing questions, and are useful in encouraging students to think about contexts and problems with which they may not be particularly familiar. Such questions may be used both to problem-solve and develop reflective practice: ‘If you were in that situation, how do you think you might react? How might others react to you?’

For questioning to be effective:

**Strategies**

• Ask only one question at a time, keeping it short.

  Avoid:

  ‘I thought your paper was interesting but I wasn’t at all sure...’
whether you regarded Johnson’s views and those of Wilson
Knight’s as more or less consonant or whether on the other
hand you detected some sort of dissonance or indeed some
unresolved dilemmas in both their views, what do you think?”
(Brown and Atkins, 1993).

• If students appear unsure, check that the question has been
understood. Look at the person responding, using verbal and
non-verbal communication to provide reinforcement and
encouragement.

• Build in **Wait Time** by asking students to think about their
answer before replying: this can be very effective.

• Use first names (though accurately).

• Avoid answering own questions.

• Decide whether the question is to be directed to the class as a
whole or to certain individuals only; if to the latter, redirect
responses/answers to other students, so that views might be
compared.

• Avoid calling upon the same students; rather, involve as many
as possible over time.

• Put each question in an encouraging manner; an autocratic tone
will soon stifle interaction, closing discussion down.

• Become familiar with the types of questions that may be used to
develop thinking skills. See above.

• Before responding, think carefully about answers given. If a
response is unclear, ask the student (with encouragement) to repeat or rephrase it. Thank students for answering, as this constitutes positive reinforcement. Do not reserve such reinforcement to correct answers alone, therefore.

- Avoid using ‘OK’ or ‘Fine’ or ‘Right’ repeatedly. Rather, add to what has been said (‘That is a very good point because it reinforces what I said previously about…’) or extend thinking by asking other students to respond.

- When unable to provide an answer (memory slip/hadn’t been asked that before), then say so, offering to follow-up and respond back. Alternatively, this is something that all students might do as a follow-up exercise for the next class.

- Instead of responding to every answer when it is given, consider waiting until a sense of what students are saying is obtained. Collect your thoughts together and then respond. Where this is done, it is useful to ask for consensus before moving on.

- Maintain a central position during questioning as this may promote better classroom interaction; however, movement will also enhance inter-activeness, especially when teaching is being conducted in a large room or lecture hall.

- Avoid interrupting or rushing to answer. Where a student appears unable to complete the question, offer some prompts, be encouraging and supportive, and above all else be patient.

- When students are reluctant to be involved, PERSEVERE. Build in thinking strategies that will help deal with this, for example:

  - Organise ‘Think-Pair-Share’ activities or quizzes.
- Ask each student to jot down answers (causes, consequences, comments etc.), or to make a summary of main points covered.
- Ask them to list, calculate, prioritise (working together may be best).
- Provide exercises requiring predictions.
- Ask for a summary of points proving difficult to understand.

On obtaining feedback, use this to plan next stage of teaching; incorporate into future classes.

Use focused questions to assess learning and understanding:
‘What are your conclusions concerning the point I have just made? ‘Is there anything that you would like to add to it?’ ‘What do you think should follow next and why?’

Use Bloom’s Taxonomy to pre-plan questions you consider must be asked, for example:

**Knowledge**
Who could define/list etc?

**Comprehension**
Could anyone explain why/summarise how…?
What would explain why…?

**Application**
What steps are required in order to…?

**Analysis**
Why are X and Y different? In what ways are they similar?

**Synthesis**
What generalisations could be made from…?

**Evaluation**
What evidence is needed to verify, correctly appraise…?

Pre-planned questions will help ensure that the questions that should be asked are asked.
When engaged in questioning remember to:

1. Prepare some key questions before class.

2. Use Bloom’s framework so as to ensure that you are:
   a) covering the range of questions from closed to open, and
   b) engaging students in reflective learning.

3. Decide at which point in your presentation questioning would be at its most effective; for example, this could be at the end of each short input or when each key point has been presented.

4. Balance the number of questions you ask with the number your students ask.

5. Keep your questions focused and specific. Rather than say ‘Any questions?’ refer instead to a specific aspect of the topic you have been covering.

6. Ask questions that encourage students to engage with you and your content: ‘Could I explain anything further?’ ‘Has that point been understood?’ ‘Can you see how A relates to B?’

7. Build in **wait time** so as to encourage reflection and thinking time.

8. Eliminate colloquial responses such as ‘Fine, OK, Right’.

9. Persevere when there is a reluctance to respond: offer prompts.

In concluding, it is worth pointing out that evaluations of teacher questioning techniques often reveal the more frequent use of closed rather than open
questions, even in postgraduate teaching. Lack of familiarity with the different question types, not using pre-planned questions or Bloom’s Taxonomy are all explanations of this.

Further Reading: Click on ‘Using Questions Effectively’:  
http://www.hcc.hawaii.edu/intranet/committees/FacDevCom/guidebk/teachtip/teachtip.htm

Explaining Skills

Brown and MacIntyre (1993) highlight that teachers and students both report the characteristic, ‘the teacher is able to explain clearly’ as one of the most highly rated teaching skills.

In later work with Wragg (1997), Brown sees explaining as being ‘at the very centre of a good teacher’s professional repertoire’ (p. 3); it is ‘about giving understanding to another and is concerned with concepts, causes, objectives, processes and relationships’.

Clear explaining is helped by:

1. Providing an overview of content: ‘In today’s class, I am going to cover three particular aspects of this topic: First, I will look at…; secondly… etc.’.

2. Providing this overview in visual format.

3. Organising content under headings: ‘We will examine the first aspect under two main headings: social and cultural.’ (Such sequencing is important for holistic, logical and sequential learners. It is also makes very good sense to do this anyway).

4. Showing how each NEW point builds on the one before. It is good
practice to engage students in doing this as well, because it will allow both you and students themselves to identify gaps in understanding: ‘I am now going to add a further example here. As I do so, think carefully about its importance and why I am introducing it.’ ‘Who could say what comes next?’

5. Providing depth of coverage on a selected number of topics rather than attempting to cover everything, which will only engage students in surface learning rather than deep learning.

6. Encouraging student engagement: ‘That was my final point. Now I’d like you to spend some time thinking about the content of today’s class: What were the key points? How do they connect to each other? What could be explained further? Who could summarise?

7. Allocating levels of importance: ‘The point I am now going to explain is central. I would therefore like you to pay careful attention to it. As I explain it, I would like you to THINK about its implications for (state specific context for this). Do you UNDERSTAND its significance? (Note redirecting of responsibility from teacher to student. If the point is so central, then it is crucial to assess understanding before proceeding).

8. Demonstrating or exemplifying – examples are invaluable and demonstrations perhaps even more so, but note guidelines given below on using a demonstration.

9. Providing analogies and examples. ‘This is similar to…or… A good example of this is….’ Better still, ask students to provide their own examples, illustrations or analogies.

10. Explaining common mistakes is also a very helpful explaining strategy: ‘A mistake commonly made when doing this is…..’ Or: ‘Always remember that in order to carry this out, you should/must do the
11. Paraphrasing – ‘Another way to explain this is...’ Or: ‘Let me state that in another way’. Paraphrasing may be necessary when dealing with more complex content, or when it is evident that meaning is not being grasped.

12. Obtaining accurate feedback: inaccuracies should be taken as an indication that the explanation has not been grasped.

13. Using highly specific questions to assess understanding. ‘Do you all understand that?’ is much too vague. Rather, refer to a specific point, concept or aspect, directing the question in a way that conveys specificity and the requirement to receive an answer which is accurate.

14. Closing out each point using appropriate emphasis and phrasing to convey what should have been understood.

15. Critically, using simple language, short sentences and a clear, audible voice. (Research analysing teacher transcripts frequently points to the complexity of teacher language, too much teacher talk and unrelated/irrelevant answering of student questions).

**Demonstrations:**

- Because demonstrations are invaluable in developing understanding, they therefore play a key role in student-centred learning. They also prove effective when students use them to teach each other.

- To enhance the benefits of a demonstration to students:
  - Ensure that it can be seen by all; if not, use alternating groups of 3 – 5.
  - Explain the purpose of the demonstration, ensuring that this is understood.
  - Find out whether or not it is actually helping to promote...
understanding; build on responses given.
- Ensure that pacing is unhurried. How will you know?
- Provide ‘hands on’ experimentation.
- Carefully time introduction of the demonstration to the teaching sequence.
- At the planning stage, ensure that all safety matters have been taken into account and managed.
- Ensure there is follow-up and application.
- Allow students time to ask questions about areas of misunderstanding.
- Allow students to offer alternative views, suggestions or solutions.

Summary of Explaining Skills:

1. Provide signposts (‘First, I will look at’ etc).
2. Select only the most relevant content/make key decisions about this.
3. Reinforce sequencing (‘I am now going to add a new point’): This is called Linking.
4. Encourage student participation: ‘Could anyone summarise the most important points so far? ‘Explain in your own words to the person next to you. Reverse roles’.
5. Use headings when organising content (social, political, economic). This is called Framing.
6. Highlight key/central points using a form of wording that will bring emphasis to them. This is called Focusing.
7. Demonstrate and give examples.
8. In sequencing material, move from less complex to more complex content, from the known to the unknown (help students see progression as it occurs).
9. Use examples, demonstrations and analogies; draw upon own and student experiences to exemplify.
10. Evaluate: test assumptions and teach accordingly.
Evaluating explaining skills: the following is a framework for doing this:

**Opening**
Did the opening set out an overview of the key points?
Were visual aids used to consolidate?
Did the opening help establish rapport with the group?
Did it indicate sub-headings and how each would build on the other?
Was sequencing logical?

**The Key Points**
Was each new point clearly/strategically introduced?
Was emphasis sufficiently placed on each so as to alert students to its introduction?
Was each summarised during closure?
Did students summarise during closure?
Were beginnings and endings clearly indicated?

**Development of the Key Points**
Were examples used?
Were analogies used?
Were demonstrations used?
Was rephrasing used where necessary?
Was pausing used to promote thinking time?

**Presentation**
Were the group members able to see and hear?
Was eye contact used?
Were audio-visual media effectively used?
Was vocabulary appropriate to the group?
Was voice intonation used for emphasis?
Were vagueness and ambiguity avoided?

(Adapted from Brown and Atkins (1988), ‘Effective Teaching in Higher Education’).
Response to each: Yes/ No.
Some underlying principles are:

1. The aim of explaining is to promote understanding, not to confuse students by overwhelming them with information.
2. It is impossible for students to remember everything. However, clear sequencing and the presenting of information in small, related chunks should have some positive advantages.
3. Attention spans are short.
4. Effective voice usage is critical when explaining. It is therefore important to vary the tone, speak neither too slowly nor too rapidly, PAUSE, and give emphasis to key points.
5. Follow your explanation of each point with a summary highlighting relevance and value. Relate the point to a tangible context (a professional domain, the class textbook, or an assignment yet to be completed).
6. Allow your students to ask questions, summarise or make comment.
7. To deepen understanding (your key goal), build in thinking time.

**Stimulus Variation: ‘…the skill of varying the stimulus.’**

Perrott (1988) has written that, ‘The purpose of this skill is to arouse… attention…. While the most effective way of doing this is to make the content itself interesting, this is not sufficient by itself. An interesting subject can be made tedious by the manner in which it is presented.’

Stimulus variation is necessary, if attention to learning is to be sustained for as long as possible. Without it, interest may quickly diminish and then prove impossible to retrieve.

Lapses in attention are commonplace. We all experience them. They occur even when the subject matter is of intense interest or presented in an inspiring way. Among other factors, attention spans are affected by:
The intrinsic nature of the subject
Communication skills of the presenter
Strategies used to enhance interest
Age, commitment and interest of audience

Stimulus variation means changing from one form of instructional media to another, so as to stimulate, motivate and maintain or increase attention. A contemporary term for stimulus variation is multi-sensory teaching (MST). When MST is used effectively, it is more likely that all types of learners, including those who are visual, auditory or kinaesthetic learners, will be engaged.

Teacher voice usage, teacher movement, teacher interaction with students, as well as student movement and the use of stimulating visuals, are all practical forms of stimulus variation.

Student movement may include:

- working and circulating within groups;
- posting questions, responses and queries;
- peer demonstrations; peer teaching;
- small group work;
- think-pair-and-share activities;
- buzz groups.

Each new stimulus should create a new span of attention. It should indicate that a new activity is about to begin. Thus, listening to the tutor is replaced by students listening to or working with each other, or simply reflecting alone. Engaging learners in active peer learning, for example in groups, is considered a crucial aspect of stimulus variation.

However, careful planning, having an action agenda, and monitoring its progress, are all important aspects of effective group dynamics.
For example, group roles and responsibilities should be carefully defined, agreed and understood. Skills training for students may even be necessary if group cohesion and group outputs are to be enhanced.

Roles may include those of chair, timekeeper, scribe, motivator, consensus-checker, devil’s advocate and presenter. Rotating roles may be necessary, however, in the interests of equality and each student’s personal development.

The dynamics of the group should not be left to chance either; rather, diversity of talent, common interests, and possibly gender mix and age/maturity should be kept in mind. Friendship groups are a further possibility.

Effective group dynamics will however depend on a number of other factors, including:

- good timing of the group activity: much too often it is rushed
- task/curricular relevance: often this is not explained
- agreement on roles: note above what these might look like
- shared understanding of individual responsibilities: preparation time is essential
- skills development (facilitated by tutor): may be necessary from the outset
- reconfiguration (when dynamics break down): essential to do this when required
- clear assessment criteria and whether group or individual effort will be assessed: often students do not know
- feedback on progress: may help motivate or redirect learning
- small sizes (3-4): this is essential
- an action plan in place: this gives purpose to activities
- a strategy for dealing with un-cooperative/non-participating members. (Students as a whole-class could agree this).

- critical friendship: students may work more co-operatively

- group self-evaluation: What is needed? Who will do what and by when? Are we reaching targets? Is help needed? From whom? (A Group Learning Agreement is arrived at). Other strategies that may be used to vary the stimulus are:

**Figure 5: Student-centred Interactive Activities**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buzz Groups</td>
<td>These allow all to participate in small clusters of participants. Discussion of the full group, drawing on the ideas put together by the smaller groups follows (snowballing effect). Very useful in obtaining participation of every individual. Prepare a topic for each group then pool ideas.</td>
</tr>
<tr>
<td>Symposium or Syndicate Discussion</td>
<td>Topic is divided into its various parts with each being researched by named individuals or an individual. Each group or individual presents to the larger group; discussion follows, links are made.</td>
</tr>
<tr>
<td>Concentric Circle</td>
<td>Small group forms within a larger circle. The inner group discusses a topic while others listen. Discussion follows, ideas are compared, roles are reversed.</td>
</tr>
<tr>
<td>Phillips 66</td>
<td>A topic is reviewed/discussed for 6 minutes by 6 people, in front of others. Groups change every 6 minutes.</td>
</tr>
<tr>
<td>Spontaneous Thinking</td>
<td>Group members are challenged to come up with ideas quickly. The ideas are then categorised and evaluated. Conclusions are presented. Very useful for problem-solving/creative thinking.</td>
</tr>
<tr>
<td>Think-Pair-Share</td>
<td>Each person considers the topic and writes down some answers. Pairs are joined together for discussion. Effective for those who find whole-class interaction difficult.</td>
</tr>
<tr>
<td>Reaction Sheet</td>
<td>Students spend a short time writing down their immediate reaction to an input from a teacher or student(s); responses are invited by tutor. Discussion follows.</td>
</tr>
<tr>
<td>Questioning</td>
<td>Probing questions such as: Why? Does that always apply? How is that relevant? Can you give an example? What alternatives are there? How reliable is the evidence? The above will help build on answers given, challenging the student to think more critically and creatively.</td>
</tr>
<tr>
<td>Main point survey</td>
<td>Students note main learning points which are shared and discussed. Consensus is arrived at.</td>
</tr>
</tbody>
</table>
| Round             | Every person takes a turn to make a statement. Useful topics:  
  - One thing I need to know about  
  - Something that I learned today  
  - An important point for me was (about the topic) |
| Peer Evaluation (not peer) | Class divided into pairs. They exchange written work or observe each other’s presentations. They give each other feedback:  
  - What was good? |
• What could be improved?
• How could it be improved?

Panel

Several ‘experts’ from the class constitute a panel. Or, several ‘experts’ from external organisations constitute a panel. They are questioned by the class members; each expert may be asked to make a short presentation, either before the questions are asked, or later.

Evaluating the use of any of the above, may be carried out simply by answering the following:

1. What changes in sensory focus took place during teaching?
2. Were they beneficial to student learning? How do you know?
3. Did voice usage reflect enthusiasm and provide emphasis?
4. Was there student movement?
5. Were audio-visuals used?
6. Was the level of teacher-student interaction high, medium or low?
7. Was the level of student-student interaction high, medium or low?
8. Was there a blend of tactile, auditory and visual media?
9. Was it effective?
10. Were pausing and wait time used to enhance/develop learning?

Further Reading:

Group Work
http://www.aston.ac.uk/current-students/welfareservices/studyskills/groupwork.jsp#P54_1941

Learning Styles
http://www.businessballs.com/kolblearningstyles.htm

Using PowerPoint effectively as part of stimulus variation:
Assessment in Higher Education

Definition

‘Assessment consists, essentially, of taking a sample of what students do, making inferences and estimating the worth of their actions…. On the basis of the sample that is taken, inferences are made about a person’s achievements, potential, intelligence, aptitudes, attitudes, motivations and, perhaps, personality and an estimate of worth in the form of grades, marks or recommendations is made’ (Brown et al., 1997, p.8).

For Knight (1995), assessment is a ‘moral activity’. This is a reminder not only of the challenges involved, but the importance of using valid/reliable strategies at all times.

In the context of student-centred learning, clearly it is imperative to protect students from assessment overload, content overload, poorly timed assessments and absent or unclear assessment criteria. Critically, then, students must:

1. Receive clear assessment criteria linked to module outcomes.
2. Have sufficient time to discuss and understand these criteria.
3. See purpose and relevance in what they are asked to do.
4. Have each (purpose and relevance) explained.
5. Have choice and the opportunity to negotiate (where appropriate).
6. Know and understand the assessment process: how marks are awarded, weightings applied, final marks calculated.
7. Have opportunities to demonstrate what they are good at and are most interested in.
8. Be given sufficient time to complete assessments (thus, handing in assessments for the different modules around the same time should be avoided).
9. Receive formative feedback and a follow-up discussion.
10. Receive detailed, constructive feedback, including clear
direction on how subsequent work could be improved.

Further reading: Click on ‘Assessment Manifesto’ on left-hand side menu of this link:

http://www.londonmet.ac.uk/deliberations/assessment/.

**Forms of Assessment**

*Diagnostic* assessment is used to identify learning preferences and needs, and to establish prior learning, knowledge and understanding.

*Formative* assessment is used to promote self-assessment and reflection, in order to bring about improvements.

*Summative* assessment is used to indicate the extent of a learner’s success in meeting the intended learning outcomes of a module or programme.

See QAA Code of Practice (2006, Appendix 2)

*Formative* assessment is of particular importance in the context of student-centred learning.

It is, in essence, assessment FOR learning, as opposed to assessment OF learning, which is generally always summative.

It is important, however, to remember that formative assessment has a classroom dimension and there are strategies which may be used for this purpose. Some useful examples will be found at the following website (Click on ‘Teaching Tips Index’ then Classroom Assessment Examples):

http://honolulu.hawaii.edu/intranet/committees/FacDevCom/

In the next section, assessment validity and assessment reliability are examined.
Validity and Reliability

Validity and reliability are foremost factors in the assessment of learning. Concerning validity, there is:

- **Face validity**: the assessment is ‘fit for purpose’. It measures exactly what it is meant to measure.
- **Content validity**: the assessment method covers all the intended module learning outcomes and the module content.
- **Construct validity**: the assessment method is constructed/designed in keeping with the experiences of the learner, for example reflective portfolios for trainee teachers, case studies for health service workers, learning journals for practitioners on placement.
- **Predictive validity**: the assessment method helps ‘predict’ future development.
- **Validity through authenticity**: valid if it helps to prepare the student for employment, and in the process, develop key graduate skills and qualities.

Reliability is enhanced by:

- **Anonymous marking** (student’s identity is not revealed)
- **Sampled/representative marking**: top, middle, bottom and all borderlines
- **Double marking** (first and second markers assess independently of each other: first marker may disclose mark to second marker)
- **Blind double marking** (marks are not given by first marker to second marker)
- **Cross marking** (staff teaching same module in different locations validate each other’s marks)
- **External moderating (external examiner)**
- **Training in assessment practices** (for example, on setting
Student Self-Assessment

Student self-assessment is central to the development of independent and critical thinking, the rationale being that:

Well-constructed self-assessment activities act as prompts to deep approaches to learning

although

...there are no guarantees that any strategy will reliably lead to a deep approach as it is students’ conceptions which influence their actions. Concerns other than those related to the learning task will always be present (Boud, 1995, p.35).

Nevertheless, self-assessment is a process of acting and thinking that must be advocated, especially at third level. It is concerned with individuals gradually becoming more adept at asking some really searching questions about the progress they are making on specific pieces of work:

‘How am I doing?’ ‘Is this enough?’ ‘Is this right?’ ‘How can I tell?’ ‘Should I go further?’ In the act of questioning is the act of judging ourselves and making decisions about the next step. This is self-assessment. (Boud, 1995, p.1).

Self-assessment should therefore enable students ‘to become effective and responsible learners’ because, ‘It is important for all learners to develop the ability to be realistic judges of their own performance and to effectively monitor their own learning’ (Boud, p.13).

As a process linked to learning and understanding, self-assessment entails reflecting on: what have I been asked to do? what do I already know? how much more do I need to find out? Or as Brown et al. (1997) have put it:
What have I been doing?
How have I been doing it?
What do I think about what I have been doing?
How could I improve my approach?

Alternatively:
• What sources/resources are needed to complete this assignment?
• What do I know about the subject/topic already?
• What do I still need to learn about it?
• What will help to fill the gaps?
• What is my action plan/time plan for completion?
• Why is this an important topic for me?
• How does it relate to work already completed/to be completed in the future?
• What links need to be established between theory and practice?
• Why have these been chosen?

Student self-assessment may also be developed by:
• giving model examples
• highlighting common errors, mistakes, weaknesses
• providing opportunities for:
  • small group/whole-class discussions (tutor facilitated) focusing on the assessment requirements
  • online discussion forums (‘Questions about the assignment’) and
  • learning sets: peers working together to encourage and support each other. (Generally these work well when dynamics are good, clear assessment guidelines are given and targets set and agreed to).
Students who are engaged in the writing of a literature review, for example, could self-assess their progress by asking:

- Has the purpose of the Review been clarified?
- Have sources been accurately referenced?
- Are these sources recent and relevant?
- Have they been organised into themes?
- Are they discussed under appropriate headings?
- Have they been compared and contrasted?
- Have new insights been stated and their importance assessed?
- Are conclusions drawn from them?
- Has an overall assessment of the value of the Review been given?
- Is the Review absent of plagiarism? (separate criteria would be used to determine this).

Through such approaches, **deep** rather than **surface** learning is the teacher’s main intention.

The earlier this process of self-assessment begins, then, the more positive should be its outcomes over time.

But what do we mean by deep learning and surface learning, terms which have been used considerably throughout this Resource?

‘Deep learning is regarded as the ‘best’ form of learning… Deep learning can be thought of as being fired by a strong ‘want’ to make sense of what is being learned – to get one’s head round it fully, to really ‘understand’ it.

Surface learning is easier to describe. It can be regarded as ‘shallow’, transient, temporary and reproductive. Surface learning may be induced by the ways in which learning achievement is seen to be assessed’ (Race, 2005, p.13).
### Surface Approach

- A heavy workload
- Relatively high class contact hours
- Excessive content
- No or limited opportunity to reflect on learning
- A lack of choice over subject and study methods
- An anxiety-provoking assessment system

### Deep Approach

- Student seeks meaning
- Independent/active learning occurs
- Peer interaction/review occurs
- Learning builds on existing knowledge and experience
- Students are encouraged to make decisions and informed choices
- Assessments are well-timed, valid and reflective in nature

### Choosing most appropriate forms of assessment

- If student collaboration is involved, consider group projects, poster displays and presentations.
- If visual elements are important, consider exhibitions, presentations, portfolios, poster displays.
- If the use of ICT is important, preparing a database, doing a multiple choice test, putting a PowerPoint presentation together, or incorporating other media forms could be used.
- If innovation and creativity are involved, consider performances, presentations (individual and group), research-based projects, student-led seminars or simulations.
- If oral skills are to be assessed, consider debates, presentations, vivas, audio and video recordings, seminars or interviews.
- If prior learning, consider diagnostic tests, portfolios, vivas, interviews.

(Adapted from Brown, S et al. (2002))

### Managing the Assessment Workload

**Tutor:**

- Reduce the number of assignments.
- Reduce length, prioritise depth.
• Use standard feedback sheets with spaces for ticks/crosses/circles e.g. very good, good, quite good, poor. Create an ‘Action Points for Improvement’ heading, for example:

**Action Points for your next assessment:**
1. Edit your work more closely. See corrections in text.
2. Integrate theory and practice.
3. Reference more accurately.
4. Provide more depth to key issues. For example, in this work it would have been helpful if you had…
5. Use working examples to clarify concepts and their application, for example (now state examples).

• Focus comments specifically on the learning outcomes set for the module. Ensure students know exactly which outcomes are being assessed.

• Use statement banks – frequently repeated comments could be listed on an assessment feedback sheet and circled as appropriate.

• Encourage student self-assessment, providing both generic and content specific criteria for this (see example above for literature reviews).

• Avoid assessing the same areas as colleagues – look for overlaps and agree where cancelling out or collaboration might occur.

• Combine learning outcomes in a single assessment: for example, theoretical knowledge and communication skills could be assessed through a presentation.

(After Brown et al., 2002).

**Students: Ensuring assessments are student-centred:**

• Link all assessments to learning outcomes.

• Provide guidance on how EACH outcome will be met in the assessment, for example:
  
  o In order to achieve Learning Outcome 1, you should….
  o In order to achieve Learning Outcome 2, you should….

• Test your assumptions concerning the validity and reliability of
each of your module assessments.

- Clarify weightings, discuss with students.
- Explain marking system.
- Clarify word limit and whether there is a 10% over or under principle.
- Ensure students know where the work has to be submitted and by which date/time.
- Clarify and adhere to penalties for late submission.
- Provide a receipt for the work stating when it was submitted and to whom.
- Provide opportunities for students to reflect on their learning in terms of new insights, ideas and understandings. Build reflection into assessment criteria.
- Assess formatively – before final submission. Give constructive advice on improving the assessment.
- Provide alternatives: different ways of meeting outcomes, including student suggested ones.
- Involve students in drawing up criteria or suggesting alternatives.
- Consider whether any lower marks could be eliminated from CA.
- Clarify which graduate qualities will be assessed.
- Require students to reflect on the graduate qualities they consider were developed. See web links below.
- On exam papers, allow students in at least one question to present a reflective analysis of their learning over a module/year/Programme.
- Provide criteria which will help students to self-assess their progress.
Here are some points to bear in mind when assessing students with a disability:

- Consider alternative assignments that allow students to demonstrate their knowledge of the subject matter if a specific task is impossible for them to carry out
- Students who are deaf may need to have questions and answers interpreted by a sign language interpreter
- Students who are blind may need to be assessed orally or may need to use screen reading software
- Some blind students may need to use a reader during assessment
- Some students may need to be assessed in a separate location from other students

The following points may be helpful when designing course materials for students with a disability:

- Meet with students to identify what accessible formats are required and what technology is being used
- Make lecture notes and handouts available on website or electronically
- When using Power Point slides or overhead transparencies, use a minimum font size of 18
- Fonts such as Arial or Comic Sans are easier to read for some students
- Limit the amount of information used on overheads to a maximum of six points
- Break continuous text up by using paragraphs and bullet points
- Use ‘bold’ to highlight points rather than underlining them
- Keep text to a minimum, use bullet points rather than sentences
- Use simple diagrams or visual cues to illustrate points
- Use double rather than single spacing
• Text written solely in upper case can be difficult to read. It is better to use both upper and lower case letters

• Use sufficient colour and brightness contrast for better visibility

• Keep backgrounds simple, avoid patterns and the use of multiple colours

• Maintain consistency of style and colour throughout the presentation

• Use dark text on a light background for bright rooms and light text on a dark background for dark rooms

Here are some points on making learning accessible:

• Make reading lists available well in advance. This will be beneficial for students with dyslexia and will also allow time for required reading to be translated into Braille or copied onto disc or tape for students who are blind

• Keep reading lists focused and direct students to key texts and online documents

• Ensure that core texts are available in alternative formats

• Give instructions both orally and in written form for the benefit of students who are blind or deaf

• Write down any new terminology, unfamiliar technical terms or key concepts

• Make class notes and handouts available in advance and/or electronically

• Face the class and avoid walking around whilst speaking

• Keep communication simple, use demonstration and give concrete
examples whenever possible

- Classroom seating needs to be arranged in order to maximise student’s ability to see and hear

- Encourage the use of laptops, tape recorders or other assistive technology

- Ensure that there is designated space available for students who need to sit at the front of the class

Source: AHEAD: The Association for Higher Education Access and Disability

On dyslexia:

http://www.practicebasedlearning.org/notts/notts.htm

Further Reading:

Learning Theory: Deep and Surface Learning
http://www.engsc.ac.uk/er/theory/learning.asp

Assessment including peer learning:
http://www.londonmet.ac.uk/deliberations/seda-publications/race.cfm
http://www.uab.edu/uasomume/cdm/feedback.htm

Student-centred teaching:

Active Learning
http://honolulu.hawaii.edu/intranet/committees/FacDevCom/guidebk/teachtip/active.htm
http://www.cte.usf.edu/bibs/active_learn/contents.html

Graduate Qualities:
Evaluating Teaching

The evaluation of teaching and the development of teaching effectiveness are processes which go hand in hand.

Self-evaluation may be carried out by:

1. Keeping a reflective diary (on selected classes rather than all)
2. Obtaining anonymous feedback from students, for example:
   - What did you most enjoy about today's class?
   - What could be improved in future classes?
   - Was the input helpful?
   - Were there any particularly difficult areas?
   - Other comments/suggestions.
3. Using an evaluation schedule: Figure 6 below.
4. Analysing a short audiotape or videotape of teaching.
5. Collaborating with a colleague/'critical friend'.
6. Benchmarking findings to a Teaching Standards framework.

In the evaluation schedule provided below, central aspects of teaching effectiveness have been brought together in order to highlight their importance.

The Schedule has three sections, the first dealing with learning outcomes, explaining skills and aspects of stimulus variation such as voice usage, the second with interaction, and the third with resources and the management of risk.
Figure 6: Teaching Evaluation Schedule: An Example

- Were the learning outcomes clear and appropriate?
- Were students informed about them at the outset?
- Were they discussed?
- Were the concepts to be developed clearly set out?
- Was their relevance established and links made to prior content?
- Was content well explained?
- Were concepts and new information clearly developed?
- Were points clearly sequenced?
- Was the pace of teaching effective (neither too rapid nor slow)?
- Was voice intonation varied and interesting?

- Were the students involved in discussion?
- Did they engage in active learning?
- Was learning formatively assessed?
- Was there interaction between tutor and students?
- Was there balance between teacher input and student activity?
- Who asked questions? Who responded? How often?
- How effective were student responses?
- How effective were tutor responses?
- Was there awareness of individual differences?

- Were resources suitable and effectively used?
- Was classroom management generally effective?
- Were any risks apparent? If so, were they effectively managed?

On obtaining feedback from an evaluation schedule such as this, it is then important to ask how, in the light of reflective practice, future teaching could or should be different. Consideration may need to be given to:

- the learning activities and outcomes
- the level(s) of concept development
• the levels of understanding: content too difficult/not difficult enough?
• knowledge assumed by tutor
• student motivation
• student activity
• assessment strategies
• type of learning (‘deep’ or ‘surface’?)
• learning styles and learning needs

**Effective Teachers-Effective Teaching**

In bringing all of the above information together, it is possible to state that effective teachers:

• Show enthusiasm for their subject
• Encourage active, student-centred learning
• Are empathetic towards their learners
• Are good communicators
• Have extensive subject knowledge which is updated as necessary
• Embrace reflective practice
• Have values that are put into practice
• Research the scholarship of learning and teaching
• Assess understanding and teach accordingly
• Encourage students to take responsibility and show initiative
• Employ new technologies
• Vary the stimulus during teaching
• Adapt their teaching to student levels
• Use inclusive strategies
• Provide opportunities for application of knowledge
• Assess understanding diagnostically, formatively, summatively
• Set high standards and help students attain them
• Create a positive climate for teaching
Definitions of effective teachers include:

1. The best kind of teacher is one who helps you do what you couldn’t do yourself but doesn’t do it for you.

2. Knowing what kind of people your learners are, and having some understanding of what they are thinking, is essential for effective teaching.
   (Scottish Curriculum Council, 1996, p.16).

3. If the teacher is unenthusiastic … this attitude is likely to rub off on students. Teachers who enjoy teaching and their subject and can put their enthusiasm across are more likely to motivate their students, and research has found a positive association between teacher enthusiasm and student involvement.
   (Muijs and Reynolds, 2001, p.16)

Conversely:

4. If good communication, presentation and de-centring skills are positive aspects that may attach to the notion of the teacher as charismatic subject, possible negative aspects might include:
   - An over concern with one’s performance rather than with the progress and development of students.
   - An over-reliance on high profile ‘personal’ attributes rather than on less visible aspects of pedagogy to do with such things as planning, assessment and evaluation.
   - A reluctance or inability to provide teachers new to the profession with constructive, practical advice on how to develop their own practice.

In the final section of this Resource, a Framework for Effective Teaching is
provided as a guide to future professional development:
A Framework for Effective Teaching

1. Effective Teachers Develop Knowledge and Understanding by:
   1.1 Ascertaining student knowledge levels, building on these to create new knowledge.
   1.2 Setting precise, attainable and measurable learning outcomes.
   1.3 Using classroom-based and other formative assessment strategies.
   1.4 Using knowledge of individual differences to promote inclusive teaching.
   1.5 Employing active and interactive learning and teaching methods to develop student-centred learning.

2. Effective teachers employ flexible and creative strategies in order to:
   2.1 Make learning enjoyable and student-centred.
   2.2 Make learning accessible.
   2.3 Provide opportunities for collaborative learning.
   2.4 Develop ‘deep’ rather than ‘surface’ learning.
   2.5 Promote student self-assessment, independence and other relevant graduate skills and qualities.

3. Effective teachers plan their teaching systematically, placing due emphasis on student-centred learning. This will entail:
   3.1 Careful prioritising of the knowledge and skills students require.
   3.2 Constructively aligning learning outcomes, teaching strategies and assessment.
   3.3 Effective management of class teaching time.
   3.4 Selective usage of appropriate models of teaching.
   3.5 Making informed judgements about content coverage aligned to learning outcomes.

4. Effective teachers employ and evaluate recognised essential teaching skills, including those of:
   4.1 Set induction and closure.
4.2 Questioning and discussion.
4.3 Explaining and demonstrating.
4.4 Communicating and interacting.
4.5 Forming and evaluating groups.

5. Effective teachers demonstrate understanding of:
   5.1 The relationship between theory and practice.
   5.2 Individual difference and inclusion.
   5.3 Valid and reliable assessment strategies.
   5.4 The Standards of Excellence pertaining to their own subject area.
   5.5 The scholarship of learning and teaching.
   5.6 Effective curriculum design.
   5.7 The graduate skills and qualities pertinent to their subject area.
   5.8 The value of self-evaluation and professional development

6. Effective teachers value:
   6.1 Diversity and inclusion.
   6.2 Collaboration rather than competition.
   6.3 Equality of opportunity for all.
   6.4 Collegiality.
   6.5 Continuing professional development.
   6.6 Respect for others.
   6.7 Creativity and flexibility.
   6.8 Self-evaluation/reflective practice.

(Dallat, 2009)
10 Critical Underpinnings to Planning and Teaching: A Summary

- Constructive Alignment: Where? How?
- Content Prioritising: Where? How?
- Critical Thinking: How? When?
- Active Learning: When? How?
- Student self-assessment: Evidence?
- Interactive Teaching: When? How?
- Aids to Learning: Which resources?
- Managing safety: Strategies?
- Essential Skills: Where? When?
- Tutor Evaluation: Strategies/Evidence?
Main Sources


