

UCD Teaching and Learning



## **Assessment in Practice**



Contributing Lecturers

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Notes:

# Workbook

The aim of the this workbook is to provide a series of resources; contextual information, methods and approaches, to the area of assessment construction and implementation.

The workbook is not exhaustive, but attempts to focus on core issues and needs. The added literary and web references provide further readings and activites if so required.

Key areas covered include:

- The Importance Of Alignment
- Assessment Principles
- Writing Effective Exam Questions
- The Design of MCQs

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

You are free to edit, adapt and copy this workbook and present it to your students and colleagues, however attribution must be given to the original authors (this work is licenced under the Creative Commons Attribution Only Licence, see <http://creativecommons.org/>)



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*Further workbooks are available, for information contact [David.Jennings@ucd.ie](mailto:David.Jennings@ucd.ie)*

Please note the materials in this workbook are based on the contents of UCD Teaching and Learning' Open Educational Resources website, for further details and online activities visit:

[www.ucdoer.ie](http://www.ucdoer.ie)

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## An Introduction to Assessment

Some of the key purposes of assessment are; to enable the communication of the achievement and subsequent status of students during their programme of learning; to provide a means of self-evaluation and information pertaining to such; to identify student placement within educational paths and/or programmes; to address the evaluation and effectiveness of instructional programmes; and to simply motivate the learner.

Student Learning	Certification	Quality Assurance
Provide feedback to improve student learning	To pass/fail a student	Provide feedback to lecturers
Motivate students	To grade/rank	Improve teaching
Diagnosis students strengths, weaknesses	To licence to proceed/practice	Monitor standards over time

Figure 1: Three Purposes of Assessment<sup>1</sup>

Type and Rationale

Formative Assessment - **Assessment for learning**

Is the assessment that provides feedback to learners in order to help them learn, and feedback to teachers to enable them to decide how a student's learning should be taken forward

Summative Assessment - **Assessment of learning**

Is the assessment which provides overall and finite evidence of the achievement of students and of what they know, understand and can do, by assigning a value (often quantative) to what the student achieves

<sup>1</sup> Mutch A, Brown G (2002) *Assessment Series No 2: A Guide for Heads of Department*. York: Learning and Teaching.



## Types of Assessment

There are four core types of assessment one may employ;

### **Diagnostic:**

Used as a low stakes assessment early on this form may offer the learner an insight into their own needs and goals pertaining to a particular module/session and invoke a level of preparedness for activities and outcomes to be addressed.

### **Formative:**

Used pro-actively as a means to assess learning, this form provides the ability to engage the learner throughout their pedagogical journey. Ideally espousing the concept of feed-forward: initiating the ability of the learner to being able to respond to their assessment feedback in a positive (learned) manner, preparing them for the next stage/phase of their programme.

### **Summative:**

Used towards the end of a learning period, these assessments are collated to determine whether a learner has fulfilled the specified learning outcomes and consequently achieve accreditation.

### **Integrative<sup>2</sup>:**

This form enables the learner to embrace their reflexive nature and captures the capabilities associated with lifelong learning skills. A core component is that a learner is rewarded for their meta-cognitive abilities rather than their declarative knowledge.

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<sup>2</sup> Crisp. (2012).

## Trends in Assessment

Written exams are being replaced by more continuous assessment and coursework. There is a move towards more student involvement and choice in assessment. Course outlines have become more explicit about the expectations in assessment. Group assessment is more frequently used (in line with the shift in emphasis within the curriculum from competition between students towards collaborative learning between students.) An understanding of process is now seen as, at least, equally important to a knowledge of facts. (In line with the general shift towards a process-based, rather than product-based curriculum.) Student focused 'learning outcomes' have begun to replace more teacher orientated 'objectives'. The focus is more on what the student will learn rather than what the teacher plans to teach. (This is in line with more student led approaches in the curriculum generally).

<b>From</b>	<b>Towards</b>
Written Exam	Coursework
Tutor led	Student Led
Implicit Criteria	Explicit criteria
Competition	Collaboration
Product assessment	Process
Objectives	Outcomes
Content	Competencies

Figure 2: Trends in Assessment

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<sup>3</sup> Brown G., Bull J., Pendlebury M (1997) *Assessing Student Learning in Higher Education*. London: Routledge.

**Task :**

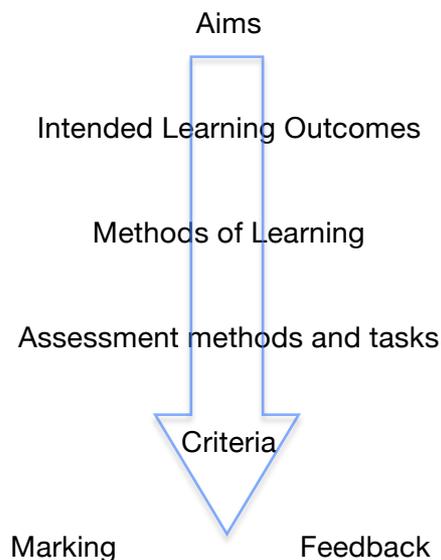
In pairs identify at least two examples that may equate to 'Coursework, 'Student Led', 'Explicit criteria' etc

Detail	Examples
Coursework	<i>Portfolios, journals, discussion fora etc</i>
Student Led	
Explicit criteria	
Collaboration	
Process	
Outcomes	
Competencies	

# The Importance of Alignment

If the aims are unclear then the system falters. Clear and realistic outcomes provide learners with a good guide of what's required to be learnt (and how this may be achieved – through suitable learning opportunities). It provides the lecturer with a direct guide and/or framework of how one may deliver and teach the programme.

Effective assessment methods and tasks are related to the learning outcomes and the methods and opportunities employed in learning. If written criteria are too vague then it is difficult for both, the assessor to ensure a consistency of judgment, and for students to fulfill the demands of the assessment task. Without close links between feedback, criteria and the assessment tasks, lecturers cannot help students to achieve the learning outcomes of a course or a programme.



## Task :

Look at the following TagCloud, evaluate what assessment method/s you may be able to implement in your own teaching, explain how you would use it, the intended effect, and analyse the situation to address any potential issues

Artefacts Assessment gatekeeping Assessment  
banks Work based assessment Book review Website  
review OSCE Class assessment Cases Open  
problems Structured summaries CBA Concept  
maps Participative online discussion Dissertations Electronic  
monitoring Essay Exhibition Field work Lab  
defence Logs Journals Simulations Annotated  
bibliographies Mastery Assessment Model  
construction MCQ Open book Orals Peer  
assessment Performance Posters  
Structured logs Problem work Schemata  
Self assessment Video Seminar presentation SAQ Research  
enquiry Terminal examinations Two-part assessment  
Web page creation E-portfolios Writing exams questions  
Writing memoranda Diagram Sheets Direct observation  
Group Work Reflective Practice Simulated interviews  
Critical incident analysis

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## Enabling Effective Testing

Traditionally an interegrated approach to assessment design is required to maximise the benefical impact for both the learner, academic, and the evaluation of a programme.

This involves the alignment of the outcomes, instructional opportunities and the assessment protocol.

*Intended Outcomes:* these statements specify what a learner should be able to do by the end of a course or programme. They may be expressed as a learner's new behaviour post a particular learning experience. Ideally they will be formulated to capture the cognitive level of performance (i.e. knowledge, intellectual attitudes and skills).

*Teaching & Learning:* whatever elements are used within the curriculum (lesson plans, labs, tutorials, autonomous learning, in-class activities, assignments etc) each should map or relate to the course outcomes. This is to say that though some outcomes may be represented by discrete activities within a course, others may be seen holistically and interwoven throughout a course.

*Assessment:* this is a process of sampling a learner's actions, quantifying and describing their perfomance and relating them to specific outcomes as a means to estimate student learning.

*Evaluation:* Appraising a learners performance, comparing and judging its quality, and relating it to whether or not the learner as achieved the course outcomes – its validity.

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## Ten Guiding Principals for Assessment in the Modular System

Modular programmes can promote open, active and flexible learning by allowing (within an appropriate framework of support) students to take increasing responsibility for their learning (Blackwell and Williamson 1999, McMahon & O’Riordan 2006).

1	Assessment should align with the learning outcomes and the teaching / learning methods used (Biggs, 2003a; Biggs, 2003b).
2	Use the principle of “backwash” (the tendency for students to let what they perceive to be what the assessment regime will reward) to prompt higher order learning and the development of autonomous learning skills. (Biggs 2003a)
3	Give students clear and easy to understand details of the assessment criteria used (McMahon & O’Riordan 2006)
4	Be aware of assessment and learning outcomes of other modules (Blackwell and Williamson, 1999)
5	Allow students choices and preferences in their learning (Elton 1988)



6	Use a number of shorter assessments, with a mixture of formative (feedback) and summative assessments, particularly in the first semester to ease students into the higher education learning experience. (Yorke, 2003)
7	Avoid overemphasis on the unseen written examination (Brown, Bull, and Pendlebury, 1997)
8	Use a variety of assessment types to support the principles of inclusive learning (O'Neill G, Huntley-Moore S, Race P (Editors).
9	Don't over-assess (Blackwell and Williamson, 1999; Association of Law Teachers, 1996)
10	Don't cluster student assessments too close together (Blackwell and Williamson, 1999)

### Task :

- Go to the UCDOER
- [http://www.ucdoer.ie/index.php/Ten\\_Guiding\\_Principles/Introduction](http://www.ucdoer.ie/index.php/Ten_Guiding_Principles/Introduction)
- Undertake the series of exercises to help review, evaluation and address your assessment practice...



## Matching Learning Outcomes To Assessment Types

Different assessments drive different types of learning, this table offers a selection of alternative modes of assessment enabling students to work to their strengths, thus providing an inclusive approach to the assessment regime.

Types of Learning: Learning outcomes	What is required from students?	Examples of Assessment
Thinking critically and making judgments	Development of arguments, reflection, judgment, evaluation	<b>Essay</b> <b>Report</b> <b>Book review</b> <b>MCQ/SAQ</b>
Solving problems / developing plans	Identify problems, define problems, analyse data, review, design experiments, plan, apply information	<b>Problem scenario</b> <b>Group Work</b> <b>Work-based problem</b> <b>Analyse a case</b> <b>Conference paper (or notes for a conference paper plus annotated bibliography)</b>
Performing procedures and demonstrating techniques	Take readings, use equipment, follow laboratory procedures, follow protocols, carry out instructions	<b>Demonstration</b> <b>Role Play</b> <b>Make a video (write script and produce/make a video)</b> <b>Produce a poster</b> <b>Lab report</b>
Demonstrating knowledge and understanding (Can be assessed in conjunction with the above types of learning)	Recall, describe, report, identify, recognise, recount, relate, etc.	<b>Written examination</b> <b>Oral examination</b> <b>MCQs</b> <b>Essays</b> <b>Reports</b> <b>Short answer questions</b> <b>Mini tests</b>

Managing / developing yourself	Work co-operatively and, independently, be self-directed, manage time, manage tasks	<b>Learning journal</b> <b>Portfolio</b> <b>Learning Contracts</b> <b>Self-evaluation</b> <b>Group projects</b> <b>Peer assessment</b>
Designing, creating, performing	Design, create, perform, produce, etc.	<b>Design project</b> <b>Portfolio</b> <b>Presentation</b> <b>Performance</b>
Assessing and managing information	Information search and retrieval, investigate, interpret, review information	<b>Annotated bibliographies</b> <b>Use of bibliographic software</b> <b>Library research assignment</b> <b>Data based project</b>
Communicating	Written, oral, visual and technical skills	<b>Written presentation</b> <b>Oral presentation</b> <b>Discussions /Debates/ role plays</b> <b>Group work</b>
(Adapted from Nightingale et al.,1996)		

### Task :

Perform a spot check on the modes of assessment above;

- How many do you use?
- Are you over assessing?
- What else is used at a programme level (is there a broad range of modes, is it distributed reasonably)? Do you offer a range of assessment to account for student preference (learning style)? Finally review your assessment protocol [what do students avoid, from what do they learn (engage with) most, what concepts are still problematic?



## Learning Contracts

A learning contract is an agreement negotiated between a learner and a supervisor to ensure that certain activities will be undertaken in order to achieve an identified learning goal, specific evidence will be produced to demonstrate that goal has been reached.

Learning contracts have grown in popularity as part of the changing trend in assessment methods from tutor-centred to more student-centred approaches. It also reflects the move towards more self-directed learning. Knight (2002b) describes how there are many alternative terms for learning contracts including 'learning agreements', 'negotiable learning agreements'.

An essential component of Learning Contracts is that they centre around the gaps in the knowledge of the student and what it is they need / wish to learn.

A learning contract usually has a written record of:

- A series of negotiated learning goals/objectives. These are set between the student and the tutor/expert
- The strategies and resources by which these goals can be met
- The evidence which will be presented to show that objectives have been achieved and how it will be assessed
- A time scale for completion

### Task:

Take a moment to individually complete the example learning contract (a page on), apply it this session, could you see your learners using this?



## The Negotiated Learning Contract / Agreement

This variation provides for clarity of purpose (learning goals and experiences) and of roles (of the tutor, learner, peer etc). In addition it enables the parties to gain a sense of ownership to the overall process, this in itself provides a strong motivational justification for partaking in any future collaborative activities. It also opens the path for the development of a number of key transferable skills; such as communication, personal effectiveness, reflective practice etc.

In this process the learner is required to be explicit about their learning intentions, setting (and agreeing to) achievable goals. And being able to justify their own plans in terms of 'x' [where x is the curriculum or agreed learning outcomes].

This is achievable at under graduate level, whether through class discussion or tangentially through individual learners deciding on their particular pathways – such as the choices provided by UCD Horizons. At graduate level it is almost an inevitability that this will occur in the discussions between a research student and their supervisor. This is further supported by recent interventions such as the student PDP and supervisor evaluation cycles.

Advantages	Disadvantages
Support individualised learning and flexible learning	Need to be carefully introduced
Enhance self-reflection, learning to learn and self-management	Can be inflexible, i.e. not take account of changes in learner's need and goals
Provides learners with clear goals	May devalue collaborative learning
Provision of pathways for achieving these goals, based on their own learning needs	May engender a legalistic attitude to education



## Example Learning Contract

**Placement:** \_\_\_\_\_

**Student:** \_\_\_\_\_

**Assessor:** \_\_\_\_\_

**Date due:** \_\_\_\_\_

<b>Intended Outcomes</b>
[Learning Goals identified by or in conjunction with the tutor]
<b>Resources and Strategies</b>
[What the learner will do to achieve these outcomes]
<b>Evidence</b>
[How the learner will demonstrate achieving the outcomes]
<b>Assessment Criteria</b>
[Negotiated or standard]



## 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 categorising 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 (Fleming, Honey & Mumford and Gardner) and the interpretation of the implied learning styles on the individual.

Fleming and Bonwell, 1998
<b>Visual:</b> Learners prefer to learn with visual reinforcement such as charts and diagrams
<b>Auditory:</b> Learners prefer to learn by listening
<b>Kinaesthetic:</b> Learners prefer to learn through, moving, doing and touching

Honey and Mumford 1996
<b>Theoretical:</b> Learners prefer to learn by reading and listening to the experts
<b>Pragmatic:</b> 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
<b>Reflective:</b> Learners tend to be imaginative and emotional. They work well in group discussions
<b>Activist:</b> Learners are action oriented. They learn by doing

Gardner 1993
<b>Visual/Spatial Intelligence:</b> 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.
<b>Verbal/Linguistic Intelligence:</b> 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.
<b>Logical/Mathematical Intelligence:</b> 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.
<b>Bodily/Kinaesthetic Intelligence:</b> 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.
<b>Musical/Rhythmic Intelligence:</b> Singing, whistling, playing musical instruments, recognising tonal patterns, composing music, remembering

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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>
- Fleming'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/>

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## 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.

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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


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# 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 . . . ?

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## 5: 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 . . . ?

## 6: 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 solution<sup>1</sup> here?

## Task :

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

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De Bono's lateral thinking [http://findarticles.com/p/articles/mi\\_qn4158/is\\_19991219/ai\\_n14266074/](http://findarticles.com/p/articles/mi_qn4158/is_19991219/ai_n14266074/)



## Activity: Evaluating and preparing Action plans

### Task:

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

### Action Plan Pro-forma

<b>Placement:</b> xxx	<b>Case</b> xxx
<b>Aim(s):</b> To ensure students know how to teach ACBT to post op patients and to know the indications for using ACBT	
<b>Objectives:</b> At the end of this session the student should be able to: <ul style="list-style-type: none"> <li>• Discuss the indications for ACBT</li> <li>• Discuss the effects of ACBT</li> <li>• Demonstrate how to teach ACBT to a patient</li> </ul>	
<b>Teacher / Facilitator Activity</b>	<b>Student Activity</b>
<p>Ask students to suggest what respiratory complications post operative patients face. Write answers they call out on the whiteboard.</p> <p>Present most recent evidence including charts on overhead.</p> <p>Comment on any differences between perception and fact – ask why this might have been so.</p> <p>Set group task – examine a series of written case studies of patient care</p> <p>Manage plenary report back.</p>	<p>Individually call out answers.</p> <p>Listen and observe.</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>

Present Summary List as OHT and Handout	Ask questions.
<b>Resources Needed:</b> PTT Presentation, OHT backup, handout and OHTs of statistics, copies of case studies, handout of care plans, final summary handout and OHTs.	

**Task :**

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

**Action Plan Pro-forma**

<b>Placement:</b>	<b>Case</b>
<b>Aim(s):</b>	
<b>Objectives:</b> At the end of this session the student should be able to:	
<b>Teacher / Facilitator Activity</b>	<b>Student Activity</b>
<b>Resources Needed:</b>	

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# Feedback

Feedback plays an important role in teaching and learning - learners need prompt feedback to learn effectively (Gibbs, 2007). In a meta-analysis of studies into student achievement, feedback was reported to be the single most powerful influence (Hattie, 1987), a finding supported by Black & Wiliam's (1998) review of formative feedback on learning.

## **Content**

Feedback should provide students with information on how they have achieved relative to the established learning outcomes, giving them an opportunity to understand where they have done well and indicate what they could improve on.

Research has found that feedback that explains where and why students have made errors can significantly increase student learning (Lysakowski & Walberg, 1981, 1982; Walberg, 1999; Tennenbaum & Goldring, 1989). This requires feedback to be constructive, specific, developmental, regular, and relate to specific aspects of the course (Gibbs & Simpson, 2005).

## **Timing**

Timely feedback is essential for development, and delay in providing feedback diminishes its value for learning (Banger-Drowns, Kulik, Kulik, & Morgan, 1991).

Resource restrictions, however, have led to a reduction in the quality, quantity, and timeliness of feedback (Gibbs & Simpson, 2005). As a result, by the time feedback is received students have moved from the topic and it is no longer relevant to them, and focus remains on the grade assigned instead (Gibbs, 2003). It's common in many modules that feedback on assessment (usually set for two-thirds of the way through the course) isn't provided until after the exam, an approach that does little to facilitate learning.

To combat this and ensure rapid feedback Gibbs (2003) suggests that on occasion, the quality of feedback should be secondary in importance to timing and frequency, so long as it is still relevant and gets the attention of the student. To be effective, feedback should occur before the end of term to enable students to absorb constructive comments and suggestions and give them an opportunity to implement them before the final assessment.

## **Getting students' attention**

It's not inevitable that students will read and pay attention to feedback, regardless of how long you spend preparing it. Suggested steps that may encourage students to engage with their feedback include (Gibbs & Simpson, 2005):

- 
- Asking students to specify on their assignment what they'd like feedback on and focusing on that (perhaps exclusively)
  - Providing feedback but no marks, so they have to read the feedback to see how they're progressing
  - Requiring assignments to be self-assessed (without any marks being assigned) so that students pay attention to criteria and the gap between their own and their tutor's perspective on these
  - Using two-stage assignments with feedback at the first stage (which isn't graded) to help students improve the quality of their work for the second stage submission (which is graded).
  - Provide a grade only after self-assessment and tutor feedback have been completed.

Students are more likely to pay attention to feedback that has a social dimension, because they care what other people think of them. Feedback personally delivered by a tutor they know socially, or from a peer has a more dramatic impact than written feedback from an anonymous tutor.

An example provided by Gibbs (2003) is of poster presentations. Other students are more likely to notice (and comment upon) rushed work, sloppy mistakes, shallow background reading, poor context etc, and this social pressure has more impact than impersonal and confidential marking.

### **Methods of delivering feedback**

The traditional verbal or written approaches to feedback can be impersonal, ineffective, and time consuming. Alternatives are listed below:

#### **Generic feedback**

Delivered in lectures/workshops/discussion boards on what the majority of students seem to be struggling with, without reference to individual assessment.

#### **Self assessment**

Allow students to provide an initial self assessment at the end of their assessment work, according to a set grid or checklist of assessment criteria. This helps students in the fastest possible manner, to have an indication of the quality of their achievement. Effective learning results from students providing their own feedback, monitoring their work against established criteria (Trammel, Schloss, & Alper, 1994; Wiggins, 1993).

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### **Peer marking and feedback**

Provide clear assessment criteria and possibly model answers to students, and ask students to mark each other's (anonymous) work and provide full written feedback. This not only helps the person receiving the feedback, but also moves the learning from the assessing student, to a higher level. Students tend to mark each other much tougher than would the tutor.

### **Student steered feedback**

The student is asked at the end of their assessment to put forward a request for feedback on a particular part of their learning. This is one of the strongest means to make a student evaluate their own progress, and allows the assessor to target a student's concerns most precisely.

### **Individual verbal feedback**

Most suitable for thesis type assessment work, such as PhD progress feedback, or feedback on project work. In many ways, this is the individual tutorial on which university learning once used to depend.

### **Podcasts**

A variation on individual feedback. After marking an essay comments can easily be digitally recorded. This is more personal than written feedback, and can convey more detailed information in a much quicker and more concise manner.

### **Grouped needs-led feedback**

Students are grouped by their need for feedback on particular content or learning. Feedback is then delivered to those students who all struggled with the same problems as a group. Students may find themselves in more groups than one, and may self-select or be selected for particular groups. This method is particularly suitable for feedback on complex learning and content.

### **Marking schemes**

Using a checklist of assessment criteria, onto which the feedback to students is written, allows students to receive their feedback in a very structured manner. A blank comment box should always be added to marking scheme forms, so as to allow for individual feedback where necessary.

Also, students may have to be taught how to effectively use feedback – not just to review past work but to take the lessons forward to future work.



## Enabling Effective Feedback (in three Steps...<sup>6</sup>)

### Prepare Students to Receive Feedback

Helps clarify what good performance is

Facilitates development of self-assessment in learning

Delivers high quality information to students about their learning

Encourages teacher and peer dialogue around learning

- Aligning their expectations with yours
- Identifying multiple channels of feedback
- Modeling the application of feedback
- Encouraging its application
- Supporting processes of self-assessment

### Reduce Emphasis on Written Feedback

Encourages teacher and peer dialogue around learning

Encourages positive motivational beliefs and self-esteem

- Explicit, written feedback is important, however...
- Written feedback rarely communicates tacit understandings
- Student engagement is enhanced if written feedback is supplemented with dialogue

### Provide Timely Feedback

Provides opportunities to close the gap between current and desired performance

Provides information to teachers that can be used to shape teaching

Students engage with (and apply) feedback if they can foresee ways to apply them

- Feedback on draft assignments may engage students more effectively
- Consider giving generic feedback as soon as possible
- New technologies may reduce the time required to prepare feedback

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<sup>5</sup> Nicol D and Macfarlane-Dick D. 2006. *Formative assessment and self-regulated learning: a model and seven principles of good feedback practice*, Studies in Higher Education, 31.2, pp 199-218

<sup>6</sup> Centre for Excellence in Teaching and Learning (CETL) 2005. *How to make your feedback work in three easy steps!* Business School at Oxford Brookes University. Accessed 01.09 [www.business.brookes.ac.uk/aske.html](http://www.business.brookes.ac.uk/aske.html)

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## Example Assessment Form for Clinical Placement: Question Constructs and Self/Peer Assessment

The following form (an abridged version) has been amended in two ways to aid in the evaluation process from both the Senior/Tutor perspective and that of the Learner.

The first amendment provides a number of suggested question constructs with which to formulate your own means of evaluating those on placement and to prepare and prompt the learner to be so prepared. They are colour coded to reflect the type of question you are formulating (see table below).

The second element provides those students on placement with a means to assess their own work and avail of their peers opinion/views. This aids reflection and collaboration creating a shared bank of knowledge and experience. Most importantly it focuses the individual learner on the task at hand and the expectations for their preparedness and engagement, in effect acting as a set of pre-defined assessment criteria (that should align with the stated learning outcomes).

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



LEARNING OUTCOME By the end of this placement the student will:	BEHAVIOURS LEVEL TWO* *Level Two has been chosen as the example template only	Peer Assessment & Notes	Self Assessment & Comments
<b>1. Demonstrate appropriate background knowledge</b>	a. Answers questions from educator/tutor on core clinical knowledge and skills. <b>What is...?</b> <b>Why did...?</b> <b>What evidence is there that...?</b> <b>Explain what happened...</b> <b>What approach would you use to...?</b> <b>What is the relationship between...?</b>  b. Justifies assessment with reference to theoretical concepts and available evidence appropriate to his/her experience. <b>What were the main...?</b> <b>How would you compare...?</b> <b>What might have happened if...?</b> <b>How would you support the view...?</b>	Case: Date:	Case: Date:
<b>2. Retrieve relevant information from available sources</b>	a. Selects all relevant information from all available sources prior to initiation of assessment. <b>Can you list three...?</b> <b>How would you classify...?</b>  b. Integrates this information into subsequent assessment. <b>Explain in your own words...?</b> <b>What is the function of...?</b>  c. Has a clear understanding of the patient's presenting complaint and management. <b>What examples can you find to...?</b> <b>What is the relationship between...?</b> <b>How would you justify...?</b> <b>What might have happened if...?</b>	Case: Date:	Case: Date:

<p><b>3. Perform assessment safely</b></p>	<p>a. Identifies and clears hazards in environment prior to and during assessment.  <b>How would you show...?</b>  <b>Describe the ideal environment for...?</b>  <b>Can you make a distinction between...?</b>  <b>What alternatives might you propose to...?</b></p> <p>b. Maintains appropriately close proximity to patients during assessment.  <b>What are the main patient needs...?</b>  <b>Suggest the core protocol for patient assessment...?</b>  <b>What is the relationship between...?</b></p> <p>c. Monitors patient response to assessment and modifies/discontinues assessment where patient safety is at risk.  <b>Describe the key issues when...?</b>  <b>Outline the approach you would take when...</b>  <b>Which do you think is better...?</b>  <b>What might have happened if...?</b></p>	<p>Case: Date:</p>	<p>Case: Date:</p>
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**Task :**

Using the form above as a template prepare some questions for a particular session / case.

What are your opinions on the Self and Peer Assessment suggestion?





## Validity Vs Reliability

Is the assessment  
assessing what it is  
meant to assess?

Does the assessment  
method consistently assess  
what is being assessed?

Assessments should be both valid and reliable. Validity describes the extent to which assessment measures what it purports to measure, and reliability that it achieves this consistently (Gronlund and Linn, 1990). Validity is considered more important than reliability, as without validity a reliable test will only consistently measure a trait inaccurately, i.e. a weighing scales consistently measuring flour 2oz lighter than it's true weight.

Types of Validity:

<b>Content validity:</b> Assessment should measure and assess what is expected to be learned
<b>Predictive validity:</b> Can the assessment accurately assess future performance
<b>Concurrent validity:</b> The extent to which results of an assessment can be collaborated by other evidence
<b>Construct validity:</b> The extent to which the assessment captures evidence of constructs being assessed (e.g. attitudes, values, intelligence)

Types of Reliability:

<b>Stability:</b> The assessment should produce consistent results when applied to the same student
<b>Parallel-form:</b> An assessment measuring the same thing should give similar results
<b>Internal consistency:</b> The components or items within an assessment when halved and assessed separately should positively correlate



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## Assessment Methods

Opportunities for innovation in assessment are boundless, though assessment usually reverts to one (or all) of the Big Three – essay questions, multiple choice questions, or reports).

Continually using the same small range of assessment methods not only results in the same skill set being assessed over and over, but also serves to disadvantage those individuals who find these methods more challenging (see *How we Learn above*). Over-reliance encourages a surface approach to learning, with the student focusing on strategies to pass rather than mastering the subject matter.

The assessment methods should be aligned to ensure that the skills and abilities developed by the students are assessed in a manner consistent with the design and delivery of the course as a whole. The choice of assessment method should therefore be influenced by the learning outcomes and the type of skills you are seeking to engender in the learners. A course designed to teaching problem-solving skills and group interaction should have a problem-solving-type assessment rather than an essay on how a problem could be overcome.



## Assessment Methods - Overview

Analyse a case	Observation of real/simulated prof practice
Annotated bibliography	Open book
Applied problem (authentic)	Oral examination / presentation
Applied task (authentic)	Participate in a 'Court of Enquiry'
Artefacts	Participative online discussion
Aural examination	Peer assessment
Book review	Performance
Case studies	Portfolios/e-portfolio
Comment on an article's theoretical perspective	Posters
Competence checklists	Prepare a committee briefing paper
Concept maps	Prepare a manual for a particular audience
Critical incident analysis	Present a case for an interest group
Demonstration	Problem scenario
Devise an encyclopedia entry	Produce an A - Z of ...
Diagram Sheets	Project (design, structure, outputs etc)
Direct observation	Report
Discussion/debate/critique...	Research enquiry
Dissertation	Role Play
Draft a research bid to a realistic brief	Rubric design (for assessment)
Essay	Self- assessment
Exhibition	Short answer questions
Eye-witness testimonials	Simulated interviews
Field work	Structured summaries
Group Work	Two-part assessment
Journal (reflective, practical / oral, video)	Viva/Lab defence
Lab report	Web page creation
Learning Contract	Website review
Letter of Advice/Approach to ....	Work based Assessment
Logs/diaries/reflective journals	Work-based problem
Make a video (write script/produce/make a video)	Write a newspaper article for a foreign newspaper
Model construction	Write an answer to a client's question
Multiple Choice Questions	Written examination
Objective Structured Clinical Examinations	Written presentation (essay, report, reflective paper etc.)

## Less Familiar Assessment Methods

Competence checklists	Used in number of professions to ensure particular abilities have been undertaken & assessed. Grid in which students identify when they observed an activity, rehearsed it, estimated themselves ready to be assessed, date the assessment took place, outcome, tutor's name, and any further comments.
Case studies	Used to enable student to demonstrate skills learned in professional contexts to other settings. This can involve requiring them to provide recommendations or solutions, or to write their own case studies based on their own experiences
Logs/diaries/ reflective journals	All used where students are marked on practice and reflection. Can range from simple logs/checklists to more detailed reflective journals
Portfolios	Widely used to provide evidence of competence from their practice. Good method to help students assess their own level of competence, by asking them to select evidence that best demonstrates their ability. Strong guidelines required though to prevent it from becoming a collection of random and irrelevant info.
Observation	This refers to the observation of the skills in practice, watching a professional and learning from the experience. Can be simple checklists or more detailed (requiring subjective responses)
Artefacts	Tend to be physical products of students' professional practice (e.g., art work, models, computer programmes, dental bridges etc). Important to have clear criteria established beforehand. Good idea to have sample artefacts before students begin, and frequent checks throughout (so time & resources aren't wasted)
Eye-witness testimonials	Can form part of a portfolio, or a separate way to evidence technical competence. May be a statement by a tutor or placement supervisor who has been observing/responsible for the student.
In-tray exercises	Students are presented with a dossier of paper which they have an opportunity to peruse before the question is presented. The dossier includes a range of information (some relevant, some not, some a total red herring) but the student must use it to solve a real world problem. Can last for an hour or all day, and may include the option to consult with other students if desired.
Objective Structures Clinical Examinations	Involve students undertaking a set of prescribed tasks (for example, 9 in 90 minutes) at a series of assessment stations often placed around a large room. These provide opportunities to demonstrate their skills in a range of areas in a practical way.
Posters/ presentations	Used by individuals or groups to demonstrate work undertaken individually or collectively. Can be theoretical or reporting back on a practical activity. Useful because can be used in conjunction with peer assessment
Orals	Can be used to interrogate the understanding that underlies practice. Serves to introduce an element of performance into assessment, though due consideration should be given to criteria and weighting of marks.
Learning contracts	Used to involve students in setting their own learning goals. Generally have four stages: entry profiling; needs analysis; action planning; evaluation. Levels of relevant competence are set out at the beginning of the programme, and then they agree upon how best to develop these to satisfy these outcomes.



## Twelve Principles of Assessment

According to the Assessment Issues Group (1995), there are 12 principles of assessment.

1. The purposes of assessment should be clear.
2. Assessment should be addressed as an integral part of the course design process.
3. Relevant assessment criteria need to be identified and used.
4. Assessment needs to be transparent.
5. Assessment needs to be consistent.
6. Assessment tasks need to be valid.
7. Assessment should be free of bias.
8. Assessment tasks need to be practicable.
9. Assessment workload needs to be realistic.
10. Assessment needs to include a wide range of methods.
11. Assessment needs to provide feedback to support the learning process.
12. Assessment needs to be integral to quality assurance procedures.

### Task :

For each of these principles, derive two or three questions that you could ask when evaluating the assessment regime on any given programme.

For example, to check that the way you assess is consistent with principle No. 1 “The purposes of assessment should be clear” you might ask one or more of the following:

- 
- What, exactly, am I aiming to achieve through this assessment? (This is a seemingly easy question. Try writing down the answer before assuming that you are certain what it is).
  - Does this assessment cover the module / course aims and intended outcomes?
  - Does what is assessed reflect what you wish students to value? (Remember students often see non-assessed tasks and information as unimportant.)

It would also be useful to try and identify any potential problems with the implementation of any of the principles.

...Can any of these principles be considered controversial?



## Designing Assessments<sup>7</sup>

Seven questions that lecturers might ask when designing an assignment are:

1. What are the outcomes to be assessed?
2. What are the capabilities/skills (implicit or explicit) in the outcomes?
3. Is the method of assessment chosen consonant with the outcomes and skills?
4. Is the method relatively efficient in terms of student time and staff time?
5. What alternatives are there? What are their advantages and disadvantages?
6. Does the specific assessment task match the outcomes and skills?
7. Are the marking schemes or criteria appropriate?

<b>Common weaknesses to avoid</b>
The tasks do not match the stated outcomes;
The criteria do not match the tasks or outcomes;
The criteria are not known to students;
Students do not understand the criteria;
Overuse of one mode of assessment such as written examinations, essays, or closed problems;
Overload of students and staff;
Insufficient time for students to do the assignments;
Too many assignments with the same deadline;
Insufficient time for staff to mark the assignments or examinations;
Absence of well defined criteria so consistency is difficult to achieve;
Unduly specific criteria which create a straitjacket for students and make marking burdensome for lecturers;
Inadequate or superficial feedback provided to students;
Wide variations in marking between modules and assessors and within assessors (self-consistency);
Variations in assessment demands of different modules

<sup>7</sup> Brown G., Bull J., Pendlebury M (1997) *Assessing Student Learning in Higher Education*. London: Routledge.



## Assessment Referencing

This is the means by which an assessment is judged. There are three key ways of applying referencing;

**Norm-related referencing:** i.e. judged against peers,

**Criterion referencing:** i.e. where a learner is judged against a set of objective criteria

**Ipsotive referencing:** i.e. where the learner is judged against themselves e.g. on prior performance

'Chief Running Water' said to his son:  
'Go out and kill your first bear'

'Go out and kill as many bears as possible'

'Go out and improve on your bear killing'

## Writing Effective Exam Questions

Levels of understanding displayed as the student learns (SOLO Taxonomy)	Phase of learning	Indicative Verbs (Compare with the Bloom's Taxonomy)
<p><b>Extended Abstract</b></p> <p>Student conceptualizes at a level extending beyond what has been dealt with in the actual teaching. Can generalize to a new area.</p>	<p><b>Qualitative Phase</b></p> <p>The detail in the responses becomes integrated into a structural pattern.</p>	<p>Theorise</p> <p>Generalise</p> <p>Hypothesise</p> <p>Reflect</p> <p>Generate</p>
<p><b>Relational</b></p> <p>Indicate orchestration between facts and theory, action and purpose.</p> <p>Understanding of several components which are integrated conceptually. Can apply the concept to familiar problems or work situations</p>		<p>Compare/contrast</p> <p>Explain causes</p> <p>Integrate</p> <p>Analyse</p> <p>Relate</p> <p>Apply</p>
<p><b>Multi-structural</b></p> <p>Indicates understanding of boundaries but not of systems.</p> <p>Understanding of several components but the understanding of each is discreet. Disorganised collection of ideas or concepts around an issue. Has not been able to relate the items in the list.</p>	<p><b>Quantitative Phase</b></p> <p>The amount of detail in the students response increases.</p>	<p>Enumerate</p> <p>Classify</p> <p>Describe</p> <p>List</p> <p>Combine</p> <p>Do algorithms</p>
<p><b>Uni-structural</b></p> <p>Concrete, minimalistic understanding of an area. Focuses on one conceptual issue in a complex case.</p>		<p>Identify</p> <p>Memorise</p> <p>Do simple procedure</p>
<p><b>Pre-structural</b></p> <p>No understanding demonstrated.</p>		<p>Misses the point</p> <p>Adapted from Biggs (1999)</p>

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## Deconstructing an MCQ

### Deconstructing an MCQ:

A multiple choice question (MCQ) is one in which the learner is invited to select one alternative (the correct one being the 'key') from a list of options (including the former and the 'distractors' – incorrect answers) in response to the question ('stem').

Thus a standard MCQ will consist of three core elements, **the stem**, **the distractors** and **the key**.

How many economists does it take to change a lightbulb?
1. They can't tell you unless you give them a lightbulb approximation to work on.
2. They're projecting three for next year, but that's a conservative estimate.
3. Nine. One to change the bulb, and eight to hold a seminar on how Nietzsche would have done it.
4. One, but they'll spend three hours checking it for alignment and leaks.
5. How many did it take this time last year?

\*See footnote for identification of other ~~miscreants!~~ distractors.

### Query:

Is an MCQ the most appropriate means to test the desired outcome?

Are there viable alternatives... Short Answer Questions, Assertion-Reason questions, Multiple Response Questions, Essay, Portfolio, Performance etc

What are the benefits of the MCQ?

\_\_\_\_\_

· 1 = Physicists, 2= Economists, 3 = Philosophers, 4 = Engineers, 5= Statisticians

## Deciding when to Use an MCQ

The use of MCQs is an attractive solution to the ever burgeoning assessment requirements, in that they may offer a fast and effective means to assess student learning... but what kind of learning...?

### Advantages of MCQs:

- Easily marked, objective and reliable
- May measure different cognitive levels
- May offer diagnostic, formative or summative assessments
- May offer opportunity for feed forward (assessment for learning) and feedback
- The development of question banks may offer mid to long-term benefits to learners and faculty

### Issues with MCQs:

- Developing good distractors is hard work
- Often difficult to determine why certain distractors are chosen i.e. no ability to garner feedback from student input/thought processes
- Often tend to test lower cognitive abilities (as these are easier to construct)
- They are difficult to write well and thus time consuming!

### Assessment Comparison / Equivalence

Assessment	Learner Effort	Faculty Effort	
Descriptive Questions - 1 hour exam	c.9 hours preparation	<i>Writing the Q's</i>	Easy
		<i>Grading Task</i>	Difficult
		<i>Grading time</i>	Long
		<i>Validity</i>	Med-High
MCQs - 1 hour exam	c.9 hours preparation	<i>Writing the Q's</i>	Difficult
		<i>Grading Task</i>	Easy
		<i>Grading time</i>	Short!
		<i>Validity</i>	High

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## The Key to Designing MCQs



### **Preparing MCQs:**

- Write them as you prepare your session plans
- Relate them to the intended outcomes (one per question)
- Make use of common misconceptions and frequent questions
- Invert the approach and invite students to design MCQs
- Invite a colleague to evaluate the MCQs and eradicate any issues

### **Developing MCQs:**

- Present practical or real world scenarios e.g. journal articles that require interpretation, case studies that require analysis
- Make use of visuals that require a learner to analyse, evaluate or describe the application of 'x'
- Use data (charts, graphs figures etc) that require the learner to appraise or formulate an answer

### **Writing MCQs:**

- Be concise and clear (always maintain the prime body of text in the question stem, not in the key and distractors)
- Ensure appropriate use of grammar i.e. do not unintentionally provide the answer via the stem
- Construct questions independently, avoid question series whereby information in one may provide context or even the answer to another

- 
- Make sure each of the distractors is 'viable', provide uniformity in the proposed answers, and ensure no overlapping
  - Avoid negative question constructs where possible, and the use of terms such as 'None of the above'

### **Tips for MCQs**

- Where possible group together similarly formatted question types
- Provide a progression from simple (easy) to complex (hard)
- Remember to mix up the order of the answers
- Statistically provide a minimum of 5 answers, thereby pushing out the 'guess' factor! [assuming you are competent to provide four distractors for each question]

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## The Editing of MCQs

This series of questions is a guide to enable one to review and amend your MCQs, and as such should be addressed post creation and ideally with a peer to hand...

**Are** the item/s addressed within the specified learning outcomes for the module / programme?

Only materials covered and identified should be assessed...

**Are** they written at the appropriate level? <sup>9</sup>

Questions should not appear trivial, however they must not also seek knowledge beyond the scope required.

**Are** they written to assess the appropriate cognitive level?

Consider the design of questions to assess particular abilities and/or in differing situations.

**Are** the key and stem correct?

*Indisputably?!*

**Does** the stem state the question?

The stem should ordinarily contain a complete statement of the question... leading to a knowledgeable learner anticipating the answer. If not, the question often requires revision and the presence of further distractors.

**Is** all the information in the stem necessary?

Edit and edit again, less is best, any additional information may be leading.

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<sup>9</sup> [see [http://www.ucd.ie/registry/academicsecretariat/level\\_desc.pdf](http://www.ucd.ie/registry/academicsecretariat/level_desc.pdf)]

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**Are** all of the distractors plausible?

Each distractor must appear possible to less knowledgeable learners. Post statistical analysis will determine less worthy distractors.

**Are** all of the distractors incorrect?

*Indisputably?!?*

**Do** any of the options overlap?

If the options are numerically based, it may be possible that a number of options are 'un-intentionally correct. It is less common in text based options, but none the less a probability – best avoided.

**Do** any of the options provide clues?

A common occurrence (unconsciously) is to provide a term in the key that appears in the stem, but not the other distractors. Alternatively a key is often written in a more precise form than its fellow distractors.

**Are** diagrams/graphics used where appropriate and are they clear?

The use of a diagram may be a more effective way of visualising the question / hypothesis. They need to be clear and pertinent to the question – no room for excess imagery!

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## Question Options in Blackboard

These Question Type items link directly to the “Blackboard Help for Instructors” page (located therein under ‘Tests, Surveys, and Pools’), and contain further detail and on occasion some video tutorials.

In reality it is the technical structure (i.e. the Blackboard configuration) of these questions that differs, and mostly they are variants upon the objective question construct – although only one is identified as an MCQ, others may still be employed as such.

Question Type	Description
<a href="#">Multiple Choice Questions</a>	Provide one correct answer
<a href="#">Multiple Answer Questions</a>	Enables multiple responses to be correct
<a href="#">Fill in the Blank Questions</a>	Provide exact matching text answer
<a href="#">Fill In Multiple Blanks Questions</a>	Provide exact matching text answers
<a href="#">Calculated Formula Questions</a>	Provide formulaic answers
<a href="#">Calculated Numeric Response Questions</a>	Provide numeric answers
<a href="#">Jumbled Sentence Questions</a>	Provide correct matching items to request in stem hints/options etc
<a href="#">Matching Questions</a>	Provide linked sets of answers
<a href="#">Ordering Questions</a>	Provide an answer in a hierarchical manner, utilising all options
<a href="#">Quiz Bowl Questions</a>	One provides the <i>question</i> rather than an answer
<a href="#">Hot Spot Questions</a>	Identify a key area within an image
<a href="#">True or False Questions</a>	Does what it says on the tin!
<a href="#">Either/Or Questions</a>	Similar to T/F, but a slightly different construct

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Other options available:

<a href="#">File Response Questions</a>	Upload of a file required, note it is corrected manually
<a href="#">Opinion Scale and Likert Questions</a>	Enables a 'personal' opinion to be elicited
<a href="#">Short Answer Questions</a>	Corrected manually
<a href="#">Essay Questions</a>	Corrected manually

Note Blackboard differs between its surveys and tests by the simple assignment of grades, i.e. a test is graded a survey is not, each question type may be used in either way.

## Preparing Questions for BlackBoard

There are a number of ways to prepare test questions for Blackboard.

1. Simply type the questions one at a time into Blackboard.

The Blackboard On Demand site provides a set of video tutorials on most of the question constructs [Test, Pools, and Surveys](#)

2. You may import a test bank provided by a textbook publisher.

Refer to the publisher's guidelines for aid, as each may vary.

3. You may prepare your test offline by [Uploading Test Questions from Microsoft Excel](#).

4. Use a quiz generator, this enables you to paste/compose certain types of question constructs into an editor (rather than Blackboard) which then generates a file you may upload to the Blackboard '*Pool Manager*'.

Notes on question compositions: <http://www.csi.edu/blackboard/bbquiz/doc.asp>

The generator: <http://www.csi.edu/blackboard/bbquiz/>



## Assessing Concept Maps

A concept map is a visual representation of knowledge. The process enables one to organize and structure information and the relationships between them. This may be done in a wholly graphical manner i.e. using images, photos, colour etc. to highlight differing concepts and their linkages or by identifying key the concepts by name or title and enclosing them in a visual box then providing connecting navigation to lesser concepts. A traditional concept provides a hierarchical representation of the information from top down, whereas a mind map may radiate from a central single concept only. Suffice to say, when creating a spider map, systems map, concept map, mind map, flow chart, visual plan etc each performs a task that no ordinary collection of notes may encompass in a single sheet – a personal visualization of knowledge – and for our and the students perspective their key ‘learning gaps’ i.e. what it is they may wish to focus on, reflect, review and develop. In this way they may be used for as a tool to support and enhance learning.

A method of assessing Concept Maps proposed by Novak and Gowin in 1984 is based on the components and structure of the map. This system awards points for:

- Valid Propositions (1 Point Each),
- Levels Of Hierarchy (5 Points For Each Level),
- Number Of Branchings (1 Point For Each Branch),
- Crosslinks (10 Points For Each Valid Cross-Link),
- And Specific Examples (1 Point For Each Example).

A less formal approach to grading Concept Maps is to use and provide a set of assessment criteria within a rubric such as the following:



	<b>Exemplary</b>	<b>Good</b>	<b>Acceptable</b>	<b>Unacceptable</b>
<b>Breadth</b>	Map includes the important concepts and describes domain on multiple levels	Map includes most important concepts; describes domain on limited number of levels	Important concepts missing and/or describes domain on only one level	Map includes minimum concepts with many important concepts missing
<b>Interconnectivity</b>	All concepts interlinked with several other concepts	Most concepts interlinked with other concepts	Several concepts linked to other concepts	Few concepts linked to other concepts
<b>Use of descriptive links</b>	Links succinctly and accurately describe all relationships	Links are descriptive and valid for most relationships	Some links unclear or vague; some invalid or unclear	Links are vague; show inconsistent relationships
<b>Efficiency of links</b>	Each link type is distinct from all others, clearly describes relationship; used consistently	Most links are distinct from others; discriminate concepts; present variety of relationships; used fairly consistently	Several links are synonymous; don't discriminate concepts well; don't show a variety of relationships; used inconsistently	Most links synonymous or vaguely describe relationships and aren't distinct from other links
<b>Layout</b>	Map is contained in a single page, has multiple clear hierarchies, is well laid out and provides a sufficient number of relevant examples with links	Map is contained in a single page, has several clear hierarchies, is fairly well laid out and provides a sufficient number of fairly relevant examples with links	Map is not contained in a single page, has unclear hierarchies, is poorly laid out and provides some fairly relevant examples with links	Map is not contained in a single page, is confusing to read with no hierarchical organization
<b>Development over time</b> (for concepts maps where a "base map" is constructed at the beginning of the course and a corresponding "final map" at the end of the course)	Final map shows considerable cognitive progression from Base map and a significantly greater depth of understanding of the domain	Final map shows some cognitive progression from Base map and a somewhat greater depth of understanding of the domain	Final map shows minimal cognitive progression from Base map and a slightly greater depth of understanding of the domain	Final map shows no significant cognitive progression from Base map and no increase in the understanding of the domain

Based on [http://cte.uwaterloo.ca/teaching\\_resources/tips/rubric%20for%20concept%20maps.html](http://cte.uwaterloo.ca/teaching_resources/tips/rubric%20for%20concept%20maps.html)

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Notes:

End of Workbook