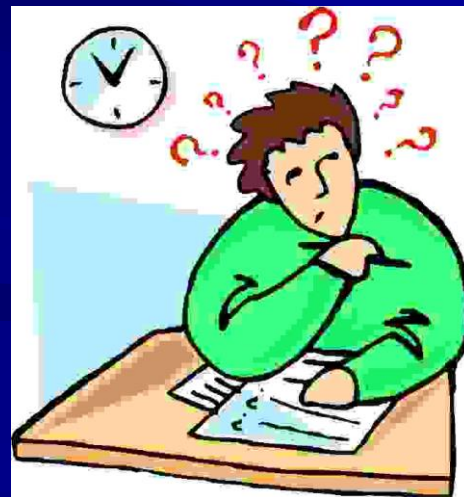
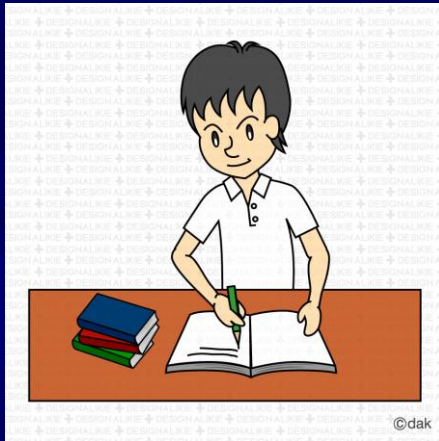


How do we link Learning Outcomes to Teaching and Learning Activities and to Assessment?



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1. What are the various types of Assessment used to assess Learning Outcomes?
2. What is the difference between Assessment and Evaluation?
3. What techniques of assessment are commonly used at university?
4. How can we match assessment to different types of learning outcomes?
5. What is constructive alignment all about?

“The adoption of a learning outcomes approach represents more than simply expressing learning in terms of outcomes. It entails much more due to their significant implications for all aspects of curriculum design, delivery, expression, assessment and standards”.

Adam S, 2004

Assessment of Learning Outcomes

- Having designed modules and programmes in terms of learning outcomes, we must now find out if our students have achieved these intended learning outcomes.
- *How will I know if my students have achieved the desired learning outcomes? How will I measure the extent to which they have achieved these learning outcomes?*
- Therefore, we must consider how to match the method of assessment to the different kinds of learning outcomes e.g. a Learning Outcome such as “Demonstrate good presentation skills” could be assessed by the requirement that each student makes a presentation to their peers.
- When writing learning outcomes the verb is often a good clue to the assessment technique.



Misconceptions about Assessment

- “A view of teaching as the transmission of authoritative knowledge has little space to accommodate the idea that different methods of assessment may be appropriate for the evaluation of different parts of the subject matter or that assessment techniques themselves should be the subject of serious study and reflection. In such a conception, lecturers see teaching, learning and assessment as tenuously related in a simple linear sequence”.
- “Assessment is something that follows learning, so there is no need to consider its function as a means of helping students to learn through diagnosing their errors and misconceptions and reinforcing their correct understanding”.
- “Assessment, like teaching, is something done to studentsAssessment classifies the students on the criterion of how well they have absorbed the data thus transmitted. What could be simpler?”

(Ramsden, 2005)

Assessment – assidere - growth



- Assessment is an integral part of teaching and learning.
- It includes
 - **Continuous** feedback,
 - **Documentation** of learning,
 - **Rubrics**
- It should be part of our class planning
- It should be to the **forefront** when designing Learning Outcomes
- Assessment is an essential component of a **successful** teaching and learning process

Formative Assessment

- ❑ Assessment **FOR** learning – gives feedback to students and teachers to help modify teaching and learning activities, i.e. helps inform teachers and students on progress being made.
- ❑ Assessment is integrated into the teaching and learning process.
- ❑ Clear and rich feedback helps improve performance of students (Black and Williams, 1998).
- ❑ Usually carried out at beginning or during a programme, e.g. coursework which gives feedback to students.
- ❑ Can be used as part of continuous assessment, but some argue that it should not be part of grading process (Donnelly and Fitzmaurice, 2005)



Summative Assessment

- Assessment that summarises student learning at end of module or programme – Assessment OF Learning.
- Sums up achievement – no other use.
- Generates a grade or mark.
- Usually involves assessment using the traditional examination.
- Only a sample of the Learning Outcomes are assessed – cannot assess all the Learning Outcomes.



Continuous Assessment

- A combination of summative and formative assessment.
- Usually involves repeated summative assessments.
- Marks recorded.
- Little or no feedback given.



Assessment

- “Assessment is the process of gathering and discussing information from multiple and diverse sources in order to develop a deep understanding of what students know, understand and can do with their knowledge as a result of their educational experiences” (Huba and Freed, 2000)
- *Assessment is "a set of processes designed to improve, demonstrate, and inquire about student learning"* (Mentkowski, M. qtd. in Palomba, C. A., and Banta, T. W. (1999). *Assessment essentials: Planning, implementing, and improving assessment in higher education*. San Francisco, CA: Jossey-Bass,).
- In short, “A way of finding out what our students know and can do”

Evaluation

- **Evaluation:** "the systematic process of determining the *merit, value,* and *worth* of someone (the evaluatee, such as a teacher, student, or employee) or something (the evaluand, such as a product, program, policy, procedure, or process)."
 - *Evaluation Glossary* [Western Michigan University, The Evaluation Center Web site,](#).
- Assessment goes further than simply evaluation. "Assessment and evaluation not only differ in their purposes but also in their use of collected information. While it is possible to use the same tools for the two approaches, the use of the data collected differs. For example, an instructor can use the results of a midterm exam for both assessment and evaluation purposes. The results can be used to review with the students course material related to common mistakes on the exam (i.e. to improve student learning as in assessment) or to decide what letter grade to give each student (i.e. to judge student achievement in the course as in evaluation)."

<http://www.purdue.edu/cie/teaching/assessment-evaluation.html>

Assessment and Evaluation of Teaching

- ***Assessment of teaching means taking a measure of its effectiveness***
- ***Evaluation*** involves measurement as part of a judgement, i.e. determining its “value,” e.g. Evaluation of teaching means passing judgment on it as part of a process such as quality assurance.
- Evaluation involves a judgement of quality.

Some questions re Assessment

- Why is assessment such a big issue in higher education at the moment?
- How best can we balance assessment FOR learning with assessment OF learning (formative and summative purposes)
- How do we make sure our method of assessment is doing the job we want it to do?
- What assessment techniques can we use to measure different types of learning outcomes?
- How can we improve exams so that they test higher order skills?
- Why have we been so traditional in assessment and not willing to make imaginative moves in area of assessment?
- Are we afraid to move into new areas of assessment in case we are accused of “dumbing down” the standards?

Trends in assessment

Traditional

- Examinations
- Lecturer-led
- Product assessment
- Vague criteria
- Content
- Individual

Changing approaches

- Course work
- Student-led
- Explicit criteria
- Skills
- Group

Purposes of assessment

- *Educational* : feedback, diagnosis, motivation, guidance, learning support
- *Managerial* : selection, grading, certification, progression, professional recognition, maintaining standards.



Assessment principles: summary

- Student centred: inclusive, diversity
- Linked to learning outcomes
- “Performance of understanding”
- Process matches purpose
- Range of modes, techniques, formats
- Transparent, fair and equitable to all users
- Valid, authentic and reliable

Assessing learning outcomes: points to consider

- Learning outcomes: “statements of what a student will know, understand and be able to do at the end of a learning experience”.
- Having described your courses in terms of learning outcomes, you now want to find out whether students have achieved them
- Specify the types of student performance that will provide evidence of learning

Assessment choices

- How best to measure the wide range of learning outcomes? Types of test items to include?
- Written, oral, practical, other techniques?
- Balance between formative and summative purposes?
- Continuous and/or terminal?



Jargon: “Modes” of assessment

- *Formal/informal*
- *Formative/summative*
- *Continuous/terminal*
- *Coursework/examination*
- *Process/product*
- *Criterion/norm referenced*

“Techniques” of assessment

- *Written*: tests, examinations, assignments
- *Practical*: skills testing; lab/workshop practice
- *Oral*: interviews, discussions, etc.
- *Aural*: listening tests
- *Project work*: individual/group; research/design
- *Field work*: data collection and reporting.
- Competence testing: threshold standards
- *Portfolio* : combination of techniques, etc.

Using different modes of assessment allows us a better chance of finding out what our students know, understand and are able to do, i.e. what learning outcomes they have achieved.

Common assessment techniques in Higher Education

- Paper/thesis
- Project
- Product development
- Performance
- Exhibition
- Case study.
- Clinical evaluation
- Oral exam
- Interview
- Research assignment
- Portfolio
- Others??

Interrogating our assessment

1. Have we included a good balance of learning outcomes in our modules? (*e.g. Bloom's Taxonomy*)
2. How do we know if students have achieved the intended learning outcomes: is there a good match between learning outcomes and assessment?
3. How can we improve assessment so that it tests the intended learning outcomes?

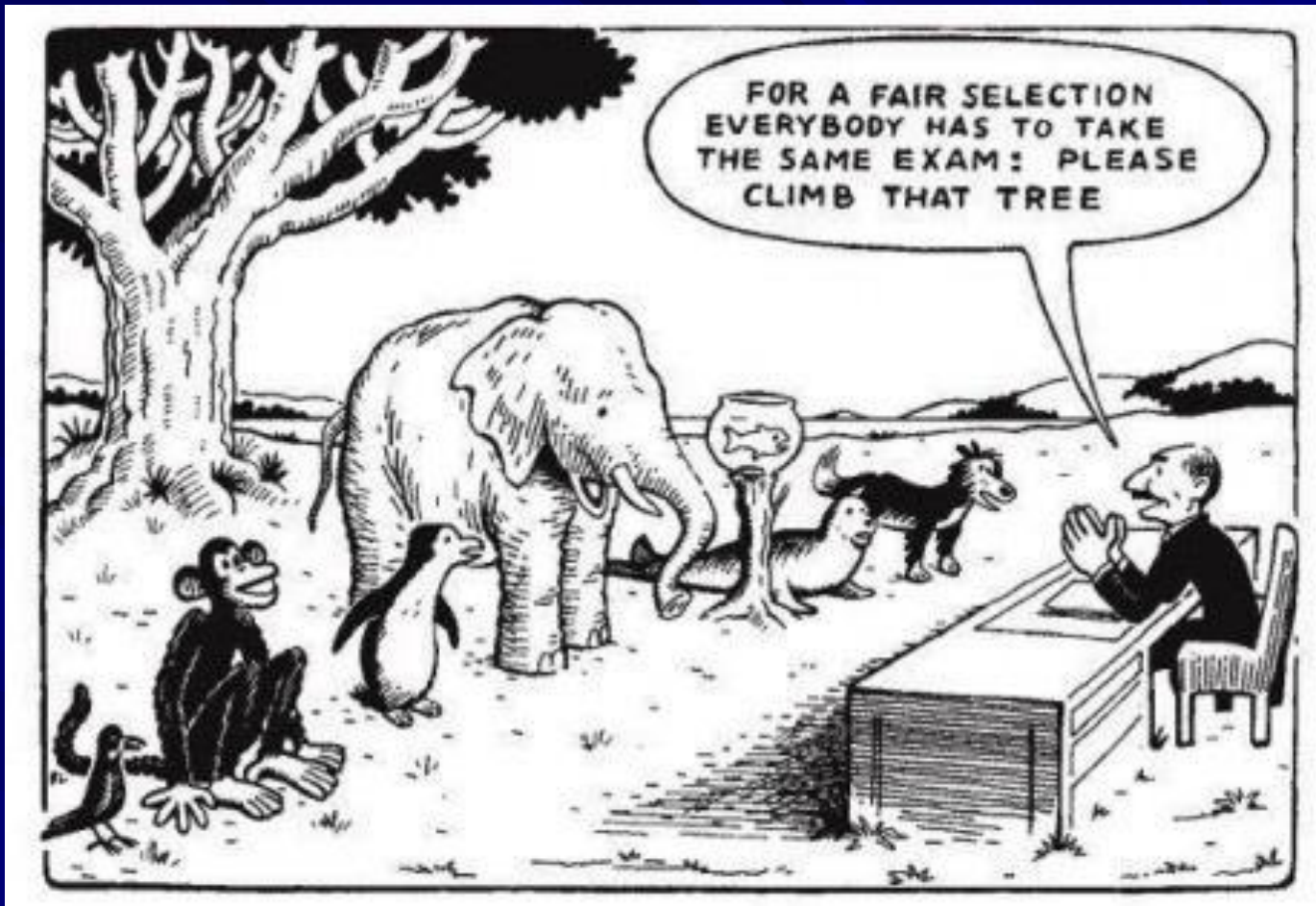
Implications of MI Theory for Innovative Forms of Teaching, Learning and Assessment

“If we truly accept and value the theory of MI, then we are obliged as teachers to be far more inventive in our teaching. We must search for and develop methodologies that will allow all intelligences to shine in the learning experience.we must grasp the notion of constructivism with both hands and give the students the freedom to explore and construct knowledge and understanding, beginning with their own strengths” . (Hyland (ed.) *Final Report MI Project*, 2000, p. 126)



- One of the big challenges is to move away from assessment based solely on terminal exams – not intelligence fair, forcing all kinds of learning to fit into the paper and pencil test straight jacket.
- Purposes of Assessment: feedback, diagnosis, motivation, guidance, learning support, selection, grading, certification, progression, professional recognition, gate-keeping.....





Everyone is a genius. But if you judge a fish by its ability to climb a tree, it will live its whole life believing that it is stupid – Albert Einstein.

CLASS, ALL YEAR LONG, I'VE TAUGHT EACH OF YOU TO LEARN AT YOUR OWN PACE IN YOUR OWN PERSONAL STYLE.



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I'VE SET GOALS FOR EACH OF YOU, INDIVIDUALLY, TO HELP YOU REACH YOUR OWN UNIQUE POTENTIAL. AND NOW THE RESULTS OF THAT WILL BE MEASURED.



5-17
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Evaluating learning outcomes

- Appropriate to the module/subject/level?
- Appropriate balance cognitive (higher/lower level), affective, psychomotor?
- Clear, concise, readily understood?
- Observable, measurable performance i.e.
can it be assessed?

A good balance of learning outcomes

Typical learning outcomes in higher education

- Cognitive [Knowledge, comprehension, application, analysis, synthesis, evaluation], Affective, Psychomotor, etc. (Bloom)
- Working alone and in teams; personal and interpersonal skills
- Communications; “information literacy”. The teacher no longer has command of all the information. The old transmission model of teaching based on certainty – encourage students to use information technology creatively and imaginatively.

Which of these are included in your courses? Are all of them assessed?

Matching assessment to learning outcomes

- *“Unless the measuring instrument matches the thing to be measured, we haven’t got a chance of learning what we want to know”* (i.e. whether the student has achieved the desired learning outcome)
- Written examinations (various types of items, usually terminal)
- Practical tests (range of approaches, coursework or terminal)
- Continuous assessment (various forms)

Example of Matching the Assessment to the Learning Outcome

Learning outcomes

1. Demonstrate good presentation skills.
2. Formulate food product
3. Identify an area for research
4. Identify signs and symptoms of MS in a patient

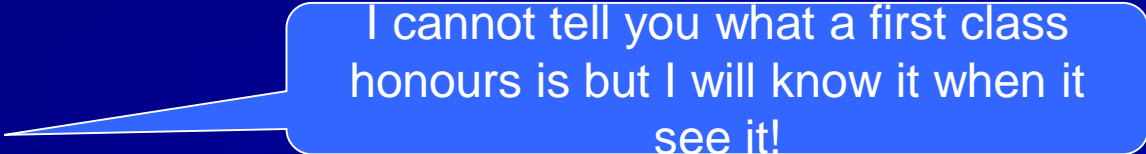
Assessment?

- a) Multiple choice questions
- b) Prepare a 1000-word research proposal
- c) Lab-based project
- d) Make a presentation to peers

Giving feedback to students

- Make it quick, clear and focussed
- Relate it to the assessment criteria and learning outcomes.
- Learning Outcomes are usually written at threshold level. “Learning outcomes should be treated as threshold statements. They should not describe the performance of the average or typical student as so many people in workshops seemed to assume” (Moon 2002 p. 8).
- Use rubrics or formal marking schemes to show how well the requirements are met.
- Steps in feedback:
 - Affirm what is done well
 - Clarify: ask questions about specific aspects
 - Make suggestions for improvement
 - Give guidance about what the student needs to do next

The statement below is no longer acceptable due to the transparency of learning outcomes.



I cannot tell you what a first class honours is but I will know it when it see it!

Assessing your assessment – is it doing the job you want it to do? Is it comprehensive?

	Assessment Task 1 e.g. Written Exam	Assessment Task 2 e.g. Project	Assessment Task 3 e.g. Presentation	Assessment Task 4 e.g. Lab work
Learning Outcome 1 Describe...				
Learning Outcome 2 Investigate..				
Learning Outcome 3 Demonstrate..				

To what extent has each Learning Outcome been achieved?

- Not a question of “yes” or “no” to achievement of Learning Outcomes.
- Rubric: A grading tool used to describe the criteria which are used in grading the performance of students.
- Rubric provides a clear guide as to how students’ work will be assessed.
- A rubric consists of a set of criteria and marks or grade associated with these criteria.

Linking learning outcomes and assessment criteria.

Learning outcome	Assessment criteria				
	Grade 1	Grade 2 : 1	Grade 2 :2	Pass	Fail
<p>On successful completion of this module, students should be able to:</p> <ul style="list-style-type: none"> ■ Summarise evidence from the science education literature to support development of a line of argument. 	<p>Outstanding use of literature showing excellent ability to synthesise evidence in analytical way to formulate clear conclusions.</p>	<p>Very good use of literature showing high ability to synthesise evidence in analytical way to formulate clear conclusions.</p>	<p>Good use of literature showing good ability to synthesise evidence in analytical way to formulate clear conclusions</p>	<p>Limited use of literature showing fair ability to synthesise evidence to formulate conclusions.</p>	<p>Poor use of literature showing lack of ability to synthesise evidence to formulate conclusions</p>

Rubrics

- Rubrics list the criteria established for assessing a piece of work and also lists the levels of achievement associated with each criterion, i.e. a gradation of quality.
- A very good guide to writing rubrics is available at http://assessment.aa.ufl.edu/Data/Sites/22/media/slo/writing_effective_rubrics_guide_v2.pdf
- See bank of sample rubrics at <http://www.manoa.hawaii.edu/assessment/resources/rubricbank.htm>

- Important to ensure that there is alignment between teaching methods, learning outcomes and assessment criteria.
- Clear expectations on the part of students of what is required of them are a vitally important part of students' effective learning (Ramsden, 2003)
- This correlation between teaching, learning outcomes and assessment helps to make the overall learning experience more transparent and meaningful for students.
- For the good teacher, learning outcomes do not involve a “paradigm shift”.



Teaching for understanding



Learning outcomes



There is a dynamic equilibrium between teaching strategies and Learning Outcomes.



Teacher-Centred Approach
– Aims and Objectives.

Teaching for understanding



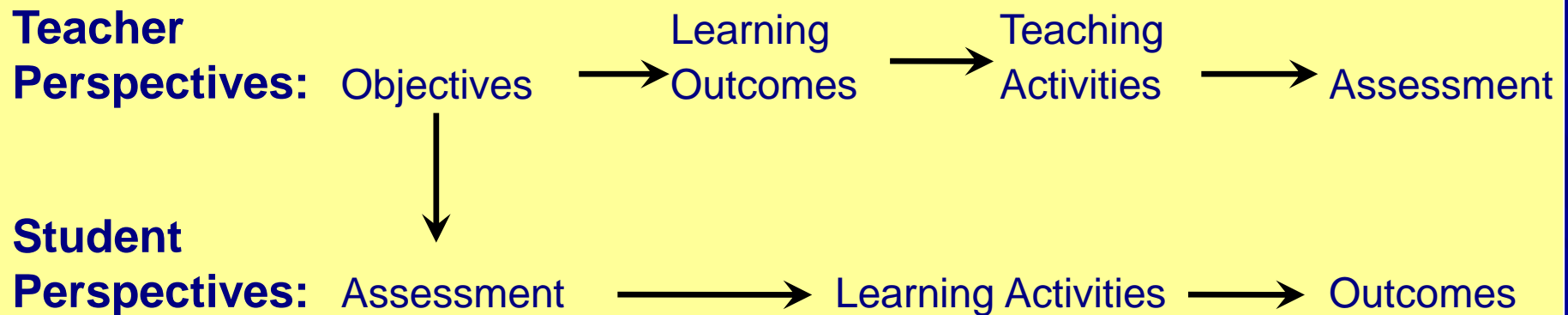
Feedback on assessment of learning outcome



Student-Centred Approach
- Learning Outcomes

It is important that the assessment tasks mirror the Learning Outcomes since, as far as the students are concerned, the assessment *is* the curriculum: “From our students’ point of view, assessment always defined the actual curriculum” (Ramsden, 1992).

Biggs (2003) represents this graphically as follows:



“To the teacher, assessment is at the end of the teaching-learning sequence of events, but to the student it is at the beginning. If the curriculum is reflected in the assessment, as indicated by the downward arrow, the teaching activities of the teacher and the learner activities of the learner are both directed towards the same goal. In preparing for the assessment, students will be learning the curriculum” (Biggs 2003)

“Constructive Alignment” (Biggs, 2005)

Constructive

- The students construct understanding for themselves through learning activities. “Teaching is simply a catalyst for learning” (Biggs, 2003).
- “If students are to learn desired outcomes in a reasonably effective manner, then the teacher’s fundamental task is to get students to engage in learning activities that are likely to result in their achieving those outcomes.... It is helpful to remember that what the student does is actually more important in determining what is learned than what the teacher does” (Shuell, 1986)

Alignment

- Alignment refers to what the teacher does in helping to support the learning activities to achieve the learning outcomes.
- The teaching methods and the assessment are aligned to the learning activities designed to achieve the learning outcomes.
- Aligning the assessment with the learning outcomes means that students know how their achievements will be measured.

- Constructive alignment is the deliberate linking within curricula of aims, learning outcomes, learning and teaching activities and assessment.
- Learning Outcomes state what is to be achieved in fulfilment of the aims.
- Learning activities should be organised so that students will be likely to achieve those outcomes.
- Assessment must be designed such that students are able to demonstrate that they have met the learning outcomes.
- Constructive alignment is just a fancy name for “joining up the dots”.

(Morss and Murray, 2005)

Steps involved in linking Learning Outcomes, Teaching and Learning Activities and Assessment

1. Clearly define the learning outcomes.
2. Select teaching and learning methods that are likely to ensure that the learning outcomes are achieved.
3. Choose a technique or techniques to assess the achievement of the learning outcomes.
4. Assess the learning outcomes and check to see how well they match with what was intended

If the learning outcomes are clearly written, the assessment is quite easy to plan!



Linking Learning Outcomes, Teaching and Learning Activities and Assessment

Learning Outcomes	Teaching and Learning Activities	Assessment
<p>Cognitive (Demonstrate: Knowledge, Comprehension, Application, Analysis, Synthesis, Evaluation)</p> <p>Affective (Integration of beliefs, ideas and attitudes)</p> <p>Psychomotor (Acquisition of physical skills)</p>	<p>Lectures</p> <p>Tutorials</p> <p>Discussions</p> <p>Laboratory work</p> <p>Clinical work</p> <p>Group work</p> <p>Seminar</p> <p>Peer group presentation etc.</p>	<ul style="list-style-type: none"> •End of module exam. •Multiple choice tests. •Essays. •Reports on lab work and research project. •Interviews/viva. •Practical assessment. •Poster display. •Fieldwork. •Clinical examination. •Presentation. •Portfolio. •Performance. •Project work. •Production of artefact etc.

Learning outcomes Module ED2100	Teaching and Learning Activities	Assessment 10 credit module Mark = 200
Cognitive <ul style="list-style-type: none"> •Recognise and apply the basic principles of classroom management and discipline. •Identify the key characteristics of high quality science teaching. •Develop a comprehensive portfolio of lesson plans 	Lectures (12) Tutorials (6) Observation of classes (6) of experienced science teacher (mentor)	End of module exam. Portfolio of lesson plans (100 marks)
Affective <ul style="list-style-type: none"> •Display a willingness to co-operate with members of teaching staff in their assigned school. •Participate successfully in Peer Assisted Learning project 	Participation in mentoring feedback sessions in school (4) Participation in 3 sessions of UCC Peer Assisted Learning (PAL) Programme. Peer group presentation	Report from school mentor End of project report. (50 marks)
Psychomotor <ul style="list-style-type: none"> •Demonstrate good classroom presentation skills •Perform laboratory practical work in a safe and efficient manner. 	Teaching practice 6 weeks at 2 hours per week. Laboratory work	Supervision of Teaching Practice Assessment of teaching skills (50 marks)

Does every learning outcome have to be assessed?

- In theory “yes” but in practice “no”.
- In some cases they have to be assessed, e.g. licence to practice (e.g. medicine) or to perform essential tasks (e.g. aircraft pilot).
- When assessment is limited purely to an examination paper, it may not be possible to assess all the Learning Outcomes in such a short space of time – sampling of Learning Outcomes.
- Even if all the Learning Outcomes are assessed on an examination paper, due to choice of questions, a student may not be assessed on all of them.

Learning Outcomes and Level Descriptors on Qualification Frameworks

- A Learning outcome on its own does not give us an indication of the level of that learning outcome in a National Qualifications Framework.
- The level of the programme in which the learning outcome (programme learning outcome or module learning outcome) is written must be indicated in the programme description.
- The institution in which the programme is being taught must ensure:
 - ✓ (a) that the programme learning outcomes map on to the relevant level in the National Qualifications Framework
 - ✓ (b) that the module learning outcomes map on to the programme learning outcomes.
 - ✓ (c) that within each module there is alignment between the Learning Outcomes, the Teaching and Learning Activities and the Assessment.

What other information, apart from the Learning outcomes is needed to describe a module?

- **Credit Weighting:** Number of ECTS credits.
- **Teaching Period(s):** Term 1, Term 2 or both. .
- **No. of Students:** Maximum number of students allowed to take the module.
- **Pre-requisite(s):** Module(s) that should already have been passed by student.
- **Co-requisite(s):** Another module that the student must take with this module.
- **Teaching Methods:** Details of number of lectures, tutorials, etc.
- **Module Co-ordinator:** Name of person in charge of module.
- **Lecturer(s):** Name(s) of person(s) teaching the module. .

Module Description (continued)

- **Module Objective:** A sentence stating the objective of the module.
- **Module Content:** A list of topics covered in the module.
- **Learning Outcomes:** On successful completion of this module, students should be able to:
[List of learning outcomes].
- **Assessment:** Details of total mark for module and details of the breakdown of this total mark, e.g. written paper, continuous assessment, project, etc.
- **Compulsory Elements:** Any part of assessment that **MUST** be passed in order to pass the module, e.g. professional practice component.
- **Penalties (for late submission of Course/Project Work etc.):** Details of marks deducted for late submission.
- **Pass Standard and any Special Requirements for Passing Module:** The minimum mark that must be obtained in order to pass the module.
- **End of Year Written Examination Profile:** Number and duration of examination papers.
- **Requirements for Supplemental Examination:** Number and duration and date of repeat examination for those who fail the module.

At the end of this talk you should be able to:

1. *Discuss the various categories of Assessment.*
2. *Distinguish between Assessment and Evaluation.*
3. *Outline a variety of assessment techniques commonly used at university level.*
4. Explain the concept of constructive alignment.
5. Demonstrate how to check for the presence of constructive alignment in a module designed by you. .