



UCD Teaching and Learning



Curriculum Design: Session Planning



Contributing Lecturers

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Notes:

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www.ucdoer.ie

Planning Teaching in an Outcomes-based Curriculum

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

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

Advisory Note: Outcomes, Objectives, & Competencies

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

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

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

Modern international good practice is to state outcomes:

- (a) from the point of view of the students
- (b) in behaviourist language

Behaviourism is a theory of animal and human learning that focuses on objectively observable behaviours. Behaviour theorists define learning as the acquisition of new behaviour. Taken to extremes this can discount mental processes entirely. It is not, however, necessary to accept this extremist view in order to make use of behaviourist theory. Rather using behaviourist language to define learning outcomes (and objectives), where this is possible, enables more efficient testing of learning and evaluation of teaching. It also enables students to study more effectively because they have a better idea what they need to do in order to maximise their marks.

Task:

Consider the following example of a teaching plan and prepare to discuss what you consider to be its good and bad points both as a model and as an actual plan.

Title: Risks to Mother	Module: Pregnancy and Early Childhood (L1 / 5 credits)	Duration: 3 hours
Aim(s): To ensure students know the causes of sudden death in pregnant or post partum women, can identify high risk patients and contribute to their care.		
Objectives: At the end of this session the student should be able to: <ul style="list-style-type: none"> • Describe the most common causes of sudden death in pregnant or post partum women. • Identify when a patient is at high risk. • Plan and manage a suitable care regime. 		

Teacher Activity	Student Activity
Ask students to suggest what might be the two most common causes of sudden death in pregnant or post partum women. Write answers they call out on the whiteboard.	Individually call out answers.
Present most recent statistics including charts on overhead.	Listen and observe.
Comment on any differences between perception and fact – ask why this might have been so.	Participate in discussion.
Ask students to identify signs and symptoms.	Listen and answer questions if asked.
Ask students to identify risk factors and how these might be checked for.	Ditto
Set group task – examine a series of written case studies of patient care	In groups examine case studies and comment on the care received
Manage plenary report back.	Report judgements to plenary.
Present Summary List as OHT and Handout	Listen and take additional notes. Ask questions.
Resources Needed: 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 soon. Be prepared to share this with others. Present your final version as a poster for display.

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

Resources needed	

Task: Review the posted teaching plans

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

Task: Big or little objectives and outcomes?

Consider the following two examples. Discuss: What might be the relative advantages and disadvantages of using 'big' or 'little' outcomes? When would it be most appropriate to use each?

Example 1:

<p>At the end of this workshop you should be able to:</p> <p>write learning objectives and / or learning outcomes which accurately indicate the intended content and processes of the courses on which you teach.</p>	<p>At the end of this workshop you should be able to:</p> <p>Define the term "learning objective".</p> <p>Distinguish between objectives and outcomes.</p> <p>Write objectives and outcomes in behavioural language.</p> <p>Justify the selection of outcomes and objectives in terms of the curriculum.</p> <p>Justify the selection of outcomes and objectives in terms of sound educational theory.</p> <p>Select and / or Compose outcomes and objectives that encourage higher order cognitive skills.</p> <p>Critically evaluate objectives and outcomes written by others.</p>
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Example 2:

<p>At the end of this module you should be able to:</p> <ul style="list-style-type: none"> • Diagnose, and devise appropriate treatment regimes for the most common cancers. • Identify when, and to whom, referral (for both diagnosis and treatment) is appropriate 	<p>At the end of this module you should be able to:</p> <ul style="list-style-type: none"> - Describe common diagnostic tests for malignancy. - Describe the stages involved in carcino-genesis, specific risk factors and possible preventive measures. - Explain host defences against cancer - List the warning signs of cancer. - Explain the local and systemic effects of cancer. - Discuss the spread of malignant tumours by invasion, metastasis and seeding and relate them to the staging of cancer. - Distinguish between benign and malignant tumours and discuss the mechanisms leading to malignancy. - Describe and differentiate between a range of malignant tumours including skin cancer, ovarian cancer, and brain cancer. - Discuss possible treatment measures for each of the above, including radiation and chemotherapy and nutrition. - Identify appropriate diagnostic referrals. - Evaluate different treatment measures in case studies of different cancers. - Identify when referrals for treatment are necessary and select the most appropriate choice available.
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Task: Learning to use verbs that suggest how student performance will be measured

One of the hardest things to do when writing outcomes is to use descriptors that actually describe the things students do that will be assessed.

Go back to the poster versions of the teaching plans and find instances where the word “understand” has been used to describe what it is that the students have to do.

Where used, is it clear how the students will demonstrate such understanding? If not, is it possible to replace “understanding” with another word or phrase?

Try and pick one example where “understanding” or a similarly vague word or phrase is used and change the wording to make what is required of the students more explicit.

You might find the list of verbs given in Figure 1 below helpful in prompting ideas.



Figure 1: A list of useful verbs.

Acquire	Divide	Plan
Advance	Devise	Predict
Analyse	Differentiate	Prepare
Apply	Disclose	Produce
Argue	Discover	Promote
Arrange	Discriminate	Quote
Assess	Elaborate	Rank
Associate	Estimate	Rearrange
Build	Evaluate	Reason
Calculate	Examine	Recommend
Change	Exhibit	Reflect
Classify	Experiment	Relate
Collect	Explain	Rewrite
Combine	Extend	Scrutinise
Compare	Forge	Select
Complete	Formulate	Separate
Compose	Generalise	Show
Conclude	Grade	Solve
Connect	Identify	Substitute
Consider	Illustrate	Summarise
Contrast	Improve	Support
Convince	Incorporate	Tabulate
Create	Infer	Test
Debate	Integrate	Weigh
Decide	Interpret	
Define	Invent	
Deliberate	Investigate	
Demonstrate	Judge	
Describe	Label	
Design	List	
Detail	Measure	
Determine	Modify	
Discuss	Name	
Distinguish	Order	

Planning Sessions in an Outcomes-based Curriculum

The main theoretical underpinning of the outcomes-based curriculum is provided by Biggs (2003). He calls the model *constructive alignment* which can be defined as:

...coherence between assessment, teaching strategies and intended learning outcomes in an educational programme

(McMahon & Thakore, 2006, p10)

As currently articulated, the model is attributed to Biggs (2003, 1999) but the essentials were formulated by Tyler (1949) some 50 years earlier - and elaborated in the 1980s by Shuell (1986). At its most basic, the model requires alignment between the three key areas of the curriculum, namely, the intended learning outcomes, what the student does in order to learn, how the student is assessed. This is expressed in Figure 2 with a concrete example given as Figure 3.

Biggs actually suggests that teaching and learning activities are designed second and the assessment regime third. If this sequence is adopted, it is important that activities are designed which enable students to learn how to demonstrate achievement at the highest level described by the outcomes. This can be done by focusing on the verbs within the outcomes that express “the very best understanding that could reasonably be expected” (Biggs p.28). (See Figures 1 & 4.)

Appropriate verbs can be discovered or derived by relating the model to a learning taxonomy such as that devised by Bloom (1956) as revised by Anderson et al (2001) and that devised by Biggs & Collis (1982). (See Figure 4)

Figure 2: A Basic Model of an Aligned Curriculum





Teaching and Learning Activities	The Intended Learning Outcomes of the Curriculum	The Assessment Regime
<p>Once an appropriate assessment regime has been designed, activities are organised that will teach the student how to meet the assessment criteria (and, hence, the outcomes).</p>  <p>What the teacher does and what the students do are specifically and openly aimed at achieving the outcomes by meeting the assessment criteria. This takes advantage of the known tendency of students to learn what they think will be assessed – and is called backwash (Biggs 2003).</p>	<p>The outcomes are formulated first.</p> 	 <p>From these the assessment criteria are developed.</p> 

Figure 3: An Example of Constructive Alignment in a Curriculum

Title of Module: Evaluating and Reflecting on your Teaching.		
Outcomes	Assessment	Teaching / Learning Activities
<i>On completion of this module you should be able to:</i>	<i>Critically reflective written report containing the following:</i>	
Monitor, evaluate and reflect on your teaching and the learning of your students	Evidence of having completed the prescribed mentoring – observation cycle A reflective statement of personal and professional gains made from the peer observation process	Introductory Group Tutorial – Revision of critical reflection theory (from previous modules). Seminar: Introduction to Peer Observation and the use of a Learning Contract. Project: be observed teaching and take part in a reflective discussion with the observer.
Use a range of methods to gather student feedback.	Evidence of having received and responded to student feedback A reflective statement of what has been achieved as a result of gathering feedback from students.	Workshop: Methods of Gathering Student Feedback Project: Collect, analyze and respond to feedback from students undertaking a module or course.
Contribute to the debate on the links between research and teaching.	Formatively assessed by tutor comments in forum. (In preparation for formal assessment of this outcome in a future module.)	On line forum.

Figure 4: Relating the Constructive Alignment Model to Learning Taxonomies.

Bloom's Taxonomy (Revised by Anderson et al 2001)	Biggs' "Levels of Attainment"	Biggs & Collis' SOLO Taxonomy
<p>Synthesis / Creation (Design, organise, formulate, propose)</p> <p>Evaluation (Judge, appraise, evaluate, compare, assess)</p>	<p>A: The very best understanding</p>	<p>Extended Abstract Thinking (Theorise, generalise, reflect, evaluate)</p>
<p>Analysis Distinguish, analyse, calculate, test, inspect.</p> <p>Application Apply, use, demonstrate, illustrate, practice.</p>	<p>B: Highly Satisfactory</p>	<p>Relational Thinking (Explain, analyse, compare, apply)</p>
<p>Comprehension Explain Describe, discuss, recognise.</p>	<p>C: Quite Satisfactory</p>	<p>Multi-structural Thinking (Classify, comment upon)</p>
<p>Knowledge Define, list, name, Recall, record</p>	<p>D: Just a Pass</p>	<p>Uni-structural (State, describe)</p>
	<p>E: Fail</p>	<p>Pre-structural</p>

A better fit with what Biggs says elsewhere in his book, however, is that the assessment regime should be designed before the teaching and learning activities. This is because for students, assessment defines what is important in the curriculum and they will learn what they think will be assessed.

As Biggs puts it:

...students learn what they think they will be tested on. This is backwash, when the assessment determines what and how students learn more than the curriculum does. In a poorly aligned system, where the test does not reflect the objectives, this will result in inappropriate surface learning

(Biggs 2003: 140)

Biggs notes that if the assessment regime does not properly reflect curriculum objectives then the result will be inappropriate “surface” learning. He then goes on to propose that educators use the inevitability of backwash to secure effective educational reform.

You can't beat backwash, so join it. Students will always second-guess the assessment task and then learn what they think will meet those requirements. But if those assessment requirements mirror the curriculum, there is no problem. Students will be learning what they are supposed to be learning

[Ibid: 210].

This concept of backwash is a key element of, and justification for, the adoption of Bigg’s Model of Constructive Alignment because it is validated by a great deal of independent research (Atkins et al 1993, Ramsden 1992, Scouller 2000).

This does not, however, in anyway diminish the importance of the other two components of the curriculum. Any review or revision of any one of the three components of an aligned curriculum requires a matching review or revision of the other two. Where a curriculum is

not aligned – i.e. where there is a discontinuity between any two of the components – it is likely that there will be a mismatch between intention and product.

At a more complex level, constructive alignment requires a balance and synergy between:

- the professional goals of the teachers
- the wants and needs of the students
- the curriculum
- the teaching methods used
- the assessment procedures used and the method or report results
- the psychological and social climate of the classroom (learning milieu)
- the psychological and social climate of the institution

Each of these components needs to work towards common goals.

Imbalance in the system will lead to poor teaching and surface learning. Non alignment is signified by inconsistencies, unmet expectations, and practices that contradict what we preach (Biggs 2003: 26).

Task: Recognizing and evaluating curriculum alignment

In groups of 3 or 4 evaluate one of your modules/module descriptors

Advisory Note:

When designing modules, use the minimum possible number of outcomes. In a study of the use of outcomes at UCD, both teachers and students reported an inverse relationship between the number of outcomes listed in the curriculum documents wherein students first encountered details of their module and positive impact on learning. As a general rule, the number of outcomes for a module worth five ECTS credits should be between three and six (McMahon & O’Riordan 2006)

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