Outcomes and Student-focused Learning and Teaching

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At End of Session

- You should be able to:
  - Differentiate between the different levels in Bloom’s ‘Taxonomy of Educational Objectives’ for planning and teaching purposes
  - Apply the principle of ‘constructive alignment’ to one of own modules, so as to identify extent of alignment within it
  - Evaluate your overall approach to the writing of learning outcomes, using criteria provided
- So:
  - What are learning outcomes?
  - Where do they originate?
  - Why use them?
  - How does one maximise their potential?
Origins/Context of Learning Outcomes

- There are a number of contextual developments, including:

  - Pioneering work by Benjamin Bloom (1956) and a
  - Bologna Agreement (1999) recommendation that:

    - By 2010, all higher education institutes in Europe should have written modules and programmes in terms of learning outcomes.

- This would:
  - bring coherence to diverse programmes and approaches
  - facilitate the development of partnerships
  - allow credit to be transferred more easily than before and
  - render teaching more student-centred (see following definition)
Definition of Student-centred

‘Student-centred learning is ...used to describe ways of thinking about teaching and learning that emphasise student responsibility and activity in learning rather than content or what the teachers are doing.

Essentially, student centred learning has student responsibility and activity at its heart, in contrast to a strong emphasis on teacher control and coverage of academic content found in much conventional, didactic teaching.’

What are learning outcomes?

Learning outcomes are:

‘…statements of what…the student will be able to do as a result of a learning activity’.
(Jenkins and Unwin, 2001)

They are ‘explicit statements of what we want our students to know, understand or be able to do…’
(University of New South Wales)
Consensus?

- ‘A learning outcome is a statement of what a learner is expected to know, understand and be able to do at the end of a period of learning and of how that learning is to be demonstrated’ (Moon, 2002).

- **A period of learning may be defined as having occurred:**
  - 1. By the end of a programme
  - 2. By the end of a module
  - 3. By the end of a class, lecture etc.
  - Or at precise intermediate/transitional points during any of the above
Why are they important?

- ‘Learning outcomes are important for recognition....The principal question asked of the student or the graduate will therefore no longer be ‘what did you do to obtain your degree?’ but rather ‘what can you do now that you have obtained your degree?’ (Council of Europe, 2002)

- This emphasises the importance of ensuring that all learning outcomes foster identified and identifiable graduate qualities and attributes.

- But what is ‘graduateness’? See links provided (slide 29).
Constructive Alignment

- Where learning outcomes are used, it is imperative that there is ‘constructive alignment’ between these outcomes, the teaching activities that are used to attain or meet them, and the assessment activities or instruments that are used to assess them.

- As Professor John Briggs has written:
Constructive Alignment:

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

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

- ‘In constructive alignment, we **start with** the outcomes we intend students to learn, and align teaching and assessment to those outcomes. The outcome statements contain a learning activity, a verb, that students need to perform to best achieve the outcome, such as "apply expectancy-value theory of motivation", or "explain the concept of ... ."

- That verb says what the relevant learning activities are that the students need to undertake in order to attain the intended learning outcome. Learning is constructed by what activities the students carry out; learning is about what they do, **not about what we teachers do**.

- Likewise, assessment is about how well they achieve the intended outcomes, not about how well they report back to us what we have told them’.
Constructive Alignment

Thus:

- ‘A good teaching system aligns teaching method and assessment to the learning activities stated in the objectives so that all aspects of this system are IN ACCORD in supporting appropriate student learning’. (Seigel, 2004)

- The following diagram illustrates what should happen:
Constructive alignment: the “golden triangle”

Learning Outcomes

Teaching and Learning Activity

Assessment
In other words:

Learning outcomes will help:

• (a) determine the most appropriate teaching strategy
• (b) identify the most appropriate assessment strategy
• (c) develop student self-assessment, autonomy and independence
• (d) ensure that all of the above are working in harmony
‘SMART’ Outcomes

- However, to be effective, learning outcomes should be:
  - SPECIFIC
  - MEASURABLE
  - ACHIEVABLE
  - REALISTIC
  - TIMED
- These features have major implications for planning
Benefits for Students

- **Specific** learning outcomes enhance focus and make learning tangible for students.
- Learning outcomes have to be **Measurable**, if they are to be attainable.
- They have to be **Attainable**, otherwise they may not be ‘fit for purpose’.
- They have to be **Realistic**, if students are to cope with them successfully.
- They have to be **Timed**, otherwise it may prove impossible to meet them.
For these reasons, outcomes:

- Must be thoughtfully written
- Conform to a standard rubric for this
- Build developmentally/sequentially on each other
- Be developed within an appropriate framework, namely:
  - Bloom’s ‘Taxonomy of Educational Objectives’ (1956)
Benjamin Bloom (1913-1999)

• Born 21 February 1913 in Pennsylvania.

• Worked as an academic at the University of Chicago.

• Came to the fore in the 1950s, when appointed by the American Psychological Association (APA) to design a classification (or Taxonomy) of educational objectives.

• Completed the Taxonomy in 1956 (original text is in DkIT Library).
Learning is a process

Former learning may be built on in order to develop more complex levels of understanding

Thinking behaviours can range from the simple recall of facts (Knowledge) to their evaluation (Evaluation).

Bloom considered Evaluation to be at the highest level of all cognitive development.
The Taxonomy has 3 Domains:

- The Cognitive Domain
  - Levels of thought

- The Affective Domain**
  - Feelings, values, dispositions

- The Psychomotor Domain**
  - Physical skills

** [http://www.businessballs.com/bloomstaxonomyoflearningdomains.htm](http://www.businessballs.com/bloomstaxonomyoflearningdomains.htm)
In the Cognitive Domain, there are six categories of learning:

- Knowledge
- Comprehension
- Application
- Analysis
- Synthesis
- Evaluation
These levels are successively arranged in a hierarchy, as follows:

1. Knowledge
2. Comprehension
3. Application
4. Analysis
5. Synthesis
6. Evaluation
Bloom’s Levels

Cognitive Domain
6. **Evaluation (the highest level)**
Making judgement about value against criteria of what has been learnt.

5. **Synthesis**
Combining together to make a coherent whole. Involves logical deduction, creativity, discovery of patterns, structures.

4. **Analysis**
Breaking into component parts, listing elements, establishing the relationship between them. One infers, compares, contrasts and categorises.
3. Application
Using something in a specific manner, experimenting, practising, testing. Applying general principles or theory to practice.

2. Comprehension
Grasping meaning, assimilating, extrapolating, communicating in one’s own words.

1. Knowledge
Recall of factual information, remembering, labelling or recognising.
Levels

- **Knowledge**: the ability to recall/list facts such as dates, formulae, tables
- **Comprehension**: the ability to grasp meaning, process information, extrapolate, understand
- **Application**: the ability to apply knowledge, solve problems, apply theory to practice

Action Verbs

- Recall, define, label, recognise, write, describe
- Summarise, translate, interpret, restate, discuss, express, infer, explain
- Apply, use, complete, modify, demonstrate, exemplify, operate
Level

- **Analysis**: breaking information down so as to infer, compare, test
- **Synthesis**: integrating knowledge in order to produce something new
- **Evaluation**: judging value using criteria to appraise, establish the worth of something

Verbs

- Analyse, differentiate, criticise, debate, deduce, relate, separate, test
- Synthesise, create, manage, generalise, integrate, invent
- Appraise, ascertain, argue, assess, attach, choose, compare, contrast, justify, measure, predict, rate, recommend
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<th>Psychomotor Domain</th>
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<td><strong>Verbs</strong></td>
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<td>Imitate/sketch/perform</td>
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<td>Support</td>
<td>Manipulate/construct</td>
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<td>Initiate</td>
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<td>Build/calibrate/balance</td>
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<td>Internalise</td>
<td>Display/choreograph</td>
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<td>Respond</td>
<td>Handle/operate</td>
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Writing Outcomes

• Each outcome would usually have:
  • An unambiguous action verb
  • An object of that verb
  • A phrase that gives the context

• For examples, see slide 2
When writing outcomes:

- Ensure that:
  - the different levels of Bloom’s Taxonomy are addressed
  - only one verb is used for each learning outcome (4-6 per module; 2-3 per class)
  - it is clear how each outcome will be assessed
  - the assessment instrument is valid/appropriate: it is ‘aligned’
  - teaching strategies and outcomes are also well aligned
  - the most essential outcomes only are used
  - students have the opportunity to discuss/understand them
  - students are involved in writing and reviewing them
  - all outcomes can be achieved within the time available (at every level: programme, module and class teaching)
  - they promote graduate qualities and attributes
Graduate Qualities/Attributes

- Please read:

- Please watch: