**Writing and Using Learning Outcomes: Guidance Notes**

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From Cardiff University web pages:

Adapted for UoL (by deleting references to Cardiff regulations/processes and adding a bit more detail in parts) <http://www.cardiff.ac.uk/learning/practices/learningoutcomesgn/learningoutcomesgnote.html#A2>

**1. What is a learning outcome?**

A learning outcome is a statement of what **a learner** should know, understand and / or **be able to do** at the end of a defined unit of learning (normally, a module, or a defined part thereof). It is easiest to think in behavioural terms, in other words **what will the student be able to do** and how can this be measured or judged i.e. there is a clear link to assessment. It will normally include an indication of the evidence required to show that the learning has been achieved and how that evidence is to be obtained.

**For a programme:**
The overall learning outcomes for any programme of study should identify the learning to be achieved by a 'typical' or 'modal' student. They should be written in the context of the appropriate national subject benchmark statements produced by the Quality Assurance Agency. The learning outcomes for programme should therefore reflect how this level is defined in the appropriate subject benchmark statements. Typically this has been defined as representing "graduates straddling the boundary between a Lower and Upper Second class honours degree", or as "the level of attainment reached by the typical student whose results fall into the main cluster".

**For a module:**
Learning outcomes for an individual should be **written to identify the learning to be achieved by a 'typical' or 'modal' student.** They should be written in the context of the assigned level (i.e. level 1,2,3,4,S or M) of the module/unit of study, and should demonstrate that there is general progression within a programme. Taken together, the learning outcomes for all of the modules available within a programme should reflect the outcomes for that programme as a whole.

It should be clear how the outcomes for both individual modules and programmes match with relevant teaching, learning and assessment strategies, as well as the programme aims, curriculum content and criteria used for assessment. Further information on this notion can be found in John Biggs’ writing on constructive alignment (this is a vey useful way to approach curriculum design or revision. Also see Butcher et al (2006) *Designing Learning*).

**2. Learning outcomes and their relationship with aims and objectives**

Objectives are often written in terms of teaching intentions and typically indicate the subject content that the teacher(s) intends to cover i.e. they are teacher centred. On the other hand, **Learning outcomes are student-centred and describe what it is that the learner should learn (and be able to do as a result of their learning).**

**Modules should be written in terms of an aim and learning outcomes.** Learning outcomes replace objectives.

* The aim is a statement of general intention, or broad purpose, of the module.
* Learning outcomes are formulated in the context of the stated aim and are descriptions of what a learner should know, understand and / or be able to do at the end of a defined unit of learning. For both programmes and individual modules, learning outcomes should therefore be written in relation to knowledge, understanding and skills.

To illustrate these points examples are given below.

**Example 1 (Geology)**

Current aim of module (which may be retained)

*To develop knowledge, understanding and skills related to the recognition and interpretation of igneous and metamorphic rocks.*

One of the current objectives of the module

*To explain the different magma geochemistries derived from partial melting of the mantle in different tectonic regimes.*

How this current objective might be reformulated as a learning outcome

*Students should be able to demonstrate how magma geochemistry relates to partial melting of the mantle by contrasting the outcomes of this process in different tectonic regimes through the critical analysis of specific case studies.*

**Example 2 (Biochemistry)**

Current aim of module (which may be retained)

*To explain the biochemical basis of drug design and development.*

One of the current objectives of the module

*To demonstrate the application of molecular graphics to drug design.*

How this current objective might be reformulated as a learning outcome

*Students should be able to apply the principles underpinning the use of molecular graphics in the design of drugs to illustrate general and specific cases through a computer-based presentation.*

**Example 3 (English)**

Current aim of module (which may be retained)

*To introduce students to modes of satiric writing in the eighteenth century.*

One of the current objectives of the module

*To familiarise students with a number of substantive eighteenth century texts. Students will be trained in the close reading of language and its relation to literary form.*

How this current objective might be reformulated as a learning outcome

*Students should be able to analyse the relationship between the language of satire to literary form by the close examination of a selected number of eighteenth-century texts in a written essay.*

**3. Essential points about learning outcomes**

**a. Learning outcomes should be developed with reference to specific higher education levels.**
i.e. Learning outcomes are written for the levels of Undergraduate and Postgraduate Study (i.e. 1,2,3,4,S or M).

**b. Learning outcomes should include an indication of the evidence that will show that the learning has been attained.**
While learning outcomes do not need to explicitly refer to particular methods of assessment, they should include an indication of the standard of the performance that will demonstrate that the defined learning has been achieved. **It should therefore be clear what a student needs to learn/do to attain that learning outcome.**

**c. Learning outcomes are statements of essential learning in relation to specified levels of achievement.**
The learning described in learning outcomes is the learning that must be attained for the student to achieve the typical level of achievement for the module concerned.

**d. Learning outcomes must relate to the criteria used for assessment.**
Learning outcomes define the learning that should be achieved by the 'typical' or 'modal' student. It therefore follows that they should equate with the assessment criteria that apply to this level. If for example the benchmark statements describe the typical level equivalent to the 50-60% band, then the assessment criteria for the 50-60% band should reflect the general attainment of learning outcomes. The assessment criteria either side of the 40% mark should also be used to differentiate between work that represents a 'minimum pass', and that which falls short of this mark.

**e. The target audience**
Learning outcomes are explicit statements of expectations in relation to identified standards of attainment aimed at a wide variety of audiences who need information on, and understanding of, the University's requirements. The audience will include students who might choose the module, External Examiners, employers and others who are interested in what the student has studied and is therefore expected to have learnt, and, not least, staff teaching on the module so that they can know what is expected of them.

**Learning outcomes therefore have a major role in the establishment, maintenance and, importantly, articulation and communication of standards.**

They have major benefits: for staff designing modules, for staff taking over a module and for reviewers and externals who can make judgments on overall design. Critically, they are valuable for students in indicating what must be learnt.

**4. Vocabulary for Writing Learning Outcomes.**

It is important to find the right words when writing learning outcomes. The following list of words and terms is provided as an aid in the familiarisation process. These verbs and are used in the context of what students can do (as a result of their learning). They link directly to assessment. These verbs are derived from Bloom’s taxonomy of learning and may be used with Krathwohl’s (2002) *A revision of Bloom’s taxonomy* in order to analyse the level of modules and programmes (note there has been a change in order and language at the highest levels in the revision).

 **Knowing**

**Activities giving evidence of knowing may be described in terms of:**

Define, describe, identify, label, list, name, outline, reproduce, recall, select, state, present, be aware of, extract, organise, recount, write, recognise, measure, underline, repeat, relate, know, match.

At this level a typical learning outcome might be expressed: Students will be able to describe the main features observed in coastal erosion……

 **Comprehension**

**Activities giving evidence of comprehension may be described in terms of:**

Interpret, translate, estimate, justify, comprehend, convert, clarify, defend, distinguish, explain, extend, generalise, exemplify, give examples of, infer, paraphrase, predict, rewrite, summarise, discuss, perform, report, present, restate, identify, illustrate, indicate, find, select, understand, represent, name, formulate, judge, contrast, translate, classify, express, compare.

**Application**

**Activities giving evidence of application may be described in terms of:**

Apply, solve, construct, demonstrate, change, compute, discover, manipulate, modify, operate, predict, prepare, produce, relate, show, use, give examples, exemplify, draw (up), select, explain how, find, choose, assess, practice, operate, illustrate, verify.

**Analysis**

**Activities giving evidence analysis may be described in terms of:**

Recognise, distinguish between, evaluate, analyse, break down, differentiate, identify, illustrate how, infer, outline, point out, relate, select, separate, divide, subdivide, compare, contrast, justify, resolve, devote, examine, conclude, criticise, question, diagnose, identify, categorise, point out, elucidate.

**Synthesis**

**Activities giving evidence of synthesis may be described in terms of:**

Propose, present, structure, integrate, formulate, teach, develop, combine, compile, compose, create, devise, design, explain, generate, modify, organize, plan, re-arrange, reconstruct, relate, re-organise, revise, write, summarise, tell, account for, restate, report, alter, argue, order, select, manage, generalise, précis, derive, conclude, build up, engender, synthesise, put together, suggest, enlarge.

 **Evaluation**

**Activities giving evidence of evaluation may be described in terms of:**

Judge, appraise, assess, conclude, compare, contrast, describe how, criticise, discriminate, justify, defend, evaluate, rate, determine, choose, value, question