Guidance on Writing Learning Outcomes

Structure

A well written learning or skills outcome has three sections

- What the student will be able to do, and in what context ; an active verb usually, with a clear object for the verb
- How well they will do it

For example

> At the end of the module a student will be able to
> *what will the student be able to do* - explain the fundamental mechanisms of planktonic ecosystems.
> *in what context* – Show how they adapt to ocean biogeography as determined by species distribution, physical and chemical environment.
> *how well* – be able to predict likely outcomes to scenarios/problems posed.

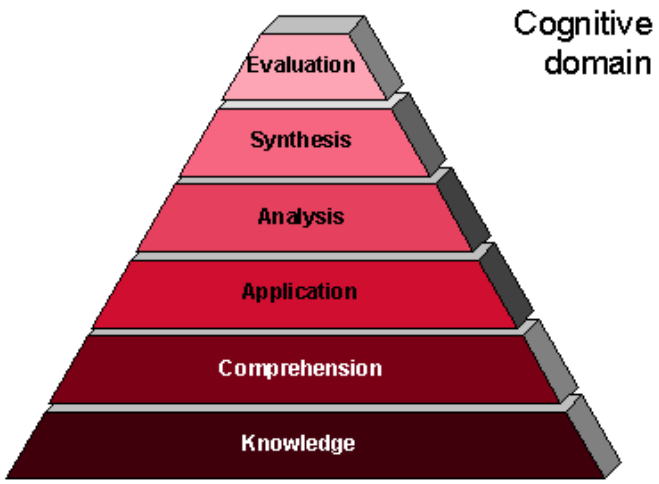
And another example

> At the end of the module it is expected students will be able to
> *what the student will be able to do* – use an appropriate software package to critically examine.
> *In what context* - quantitative survey data
> *how well they will do it* - present (...) data to support the findings of their project

Top tips

- Use a single, clear action verb for each learning outcome
- Do not use vague terms such as 'know about, be familiar with, understand, be aware of'. These cover such a broad range of meanings that they are useless!
- Write in short sentences to maintain clarity. A learning outcome is much clearer as a number of short sentences rather than one, long, complex sentence.
- Module or course learning outcomes should relate to programme learning outcomes, so check to ensure this is the case.
- The learning outcomes should be observable and measureable. Learning outcomes describe observable behaviours and actions, invisible activity may well be vitally important but we can only assess how the invisible becomes, or impacts on, observable actions.
- There should be a clear link between learning outcomes and assessment and a learning outcome should not be included if it is not possible to assess it.
- Ensure the learning outcome can reasonably be accomplished within the timescale of the module or course and the resources available.

- Consider the assessment of the outcome when writing it. Very broad outcomes can be difficult to assess effectively as it is not clear what is being assessed. Very narrow outcomes can leave you with very little flexibility in the assessment.
- Similarly broad outcomes can make the curriculum unwieldy, while very narrow ones can be too constraining.
- Show a progression in learning through the stages of a degree by using verbs drawn from the various stages of the cognitive domain of Bloom's Taxonomy[1]. Entry year courses may be drawn from lower levels with a progression through to the Synthesis and Evaluation levels by final year. A table of possible verbs for each level is included below.[2]



- Finally, once you have written your learning outcomes discuss them with colleagues, former students or LTDS. This will help to ensure they are clear and make sense.

Table of useful verbs

Knowledge (remembering)	Arrange, define, describe, duplicate, identify, label, list, match, memorise, name, order, outline, reorganise, reproduce, recall, record, recount, relate, repeat, reproduce, select, state
Comprehension (understanding)	Clarify, classify, convert, describe, discuss, distinguish, estimate, explain, express, generalise, give examples of, identify, indicate, infer, locate, paraphrase, predict, recognise, reorganise, report, restate, review, select, summarise, translate

[1] Atherton J S (2011) *Learning and Teaching; Bloom's taxonomy* [On-line: UK] retrieved 16 February 2011 from http://www.learningandteaching.info/learning/bloomtax.htm

[2] Note that under a revision of the taxonomy published in 2001 by Anderson & Krathwohl, the names of some of the domains have changed to make their function clearer. The revised names are shown in parenthesis in the table of useful verbs.
Bloom also worked on the other two domains of learning and reference can be found to these in the Atherton article.

Application (applying)	Apply, choose, demonstrate, dramatise, employ, illustrate, interpret, intervene, manipulate, modify, operate, practice, predict, prepare, produce, relate, schedule, sketch, solve, use
Analysis (analysing)	Analyse, appraise, break down, calculate, categorise, compare, contrast, criticise, debate, differentiate, discriminate, distinguish, examine, experiment, inspect, infer, investigate, outline, question, relate, test
Synthesis (or evaluating)	Arrange, assemble, categorise, collect, combine, compose, construct, create, design, develop, devise, elaborate, formulate, invent, manage, modify, organise, plan, prepare, propose, rearrange, revise, rewrite, set up, start, summarise, synthesise, tell, write
Evaluation (or creating)	Appraise, argue, assess, attach, choose, compare, conclude, contrast, create, criticise, defend, discriminate, estimate, evaluate, interpret, judge, justify, measure, predict, rate, relate, revise, score, select, support, summarise, value

Other points to consider

There is no absolute rule on how many outcomes a module or course needs. One module may have many outcomes which are relatively straight forward to achieve and assess, another may have fewer, more demanding and complex outcomes. As a rough guide, it is unlikely a module would have fewer than three, or more than a dozen, learning and skills outcomes.

Learning outcomes which deal with knowledge and understanding are more challenging to write than those dealing with skills. They can often end up as précis of the course or module content rather than giving an explicit statement of what students will be learning. Often the level of knowledge and understanding expected of the student is implicit. This does not help student learning. It is here that referring back to the levels of Bloom's taxonomy can help to make explicit the level the students are expected to achieve. Is it comprehension or analysis, application or evaluation?

Learning outcomes which cover skills may be easier to draft but often do not indicate the level of the skill. For example, you will be able to use computer software. Many primary school children do this, so for university study we need to be clearer in defining what we mean. Three factors can help with this

- How much autonomy does the student have?
- How complex is the context they are working in?
- How much originality do they have to show?

So a more 'university level' outcome may be - use relevant software to analyse experimental findings and present the results in an appropriate way, highlighting any specific issues arising from the results.

Learning outcomes can do two things, either define the minimum standard of achievement or the standard the average student is expected to achieve. These are referred to as 'threshold'

or ‘modal’ outcomes. If an outcome starts ‘students will’ it is probably a threshold, i.e. all students will achieve that outcome. If it starts ‘expected that students will’ it is more modal in nature. The examples at the start of this document are firstly threshold and secondly modal. Most outcomes should usually be modal, though there will be threshold outcomes in many modules, perhaps particularly where there are professional standards to be met.

Well written learning outcomes can be immensely helpful when constructing assessments as they give a clear steer on what to assess, both level and context.

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