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LEARNING OUTCOMES

What are learning outcomes?

A learning outcome is the key, measurable learning or behaviour to be demonstrated by a student after a specific period of study. Learning outcomes change the emphasis from what the lecturer will teach (content) to what the student will know, understand or do at the end of the learning period.

Why are learning outcomes useful?

Learning outcomes help to focus the learning for both students and teachers. They give clear and specific information about *what* students need to do, and *how* they need to do it, in order to achieve success in a module or course.

How do I write learning outcomes?

Learning outcomes have three elements:

- An **action verb** describing the **behaviour** (what the student will do) which demonstrates the student's learning
- Information about the **context** for the demonstration
- **The level** at which the outcome will be demonstrated

In order to write clear learning outcomes, the lecturer first needs to identify the aims of the programme, and then the essential, core learning that needs to take place in order to meet these aims. **Level descriptors** indicate the complexity and depth of learning expected from the student, and the level of independence with which the student is expected to work.

Once the core learning has been identified, consider how you will know when the student has achieved this core learning. What assessment tasks will you use to measure achievement of the learning outcomes?

Ideally, each learning outcome should contain only one **action verb**, and it needs to be **specific** and **measurable**. Ambiguous learning outcomes such as 'on successful completion of this session students will *know..., understand... think,*' etc., can be very hard to measure objectively.

Sentence structure should be kept as simple as possible to avoid confusion or differences of interpretation amongst students, teachers and markers.

Higher education learning outcomes are frequently based on one of two frameworks:

- **Bloom's taxonomy** works on the basis that students build on former learning to achieve the higher levels of understanding. Bloom's 1956 taxonomy was revised by Anderson and Krathwohl (2001).
- **The SOLO (Structure of Observed Learning Outcomes) taxonomy** (Biggs and Collis, 1982) describes the stages in understanding of a topic, and is particularly useful in aligning learning outcomes with levels of understanding.

(The table at the end of this flyer illustrates how these taxonomies are structured.)

How do learning outcomes relate to assessment?

The learning outcomes of a unit of learning should relate directly to the assessment task and assessment method in order to accurately check that the students have actually achieved the outcomes. This is known as **constructive alignment** (Biggs, 2007). Constructive alignment describes the relationship between:

- what the teacher intends the students will be able to do because of their learning (**learning outcomes**),
- the **teaching and learning activities** in which the students engage to facilitate the desired learning, and

- the **assessment tasks** that test the students' accomplishment of the learning outcomes.

Assessment criteria are used to indicate what standard a student should meet to demonstrate that the learning outcomes of a module have been achieved. An assessment method could be 'a 1500 word essay', while the assessment criteria could be 'a well-structured essay containing an introduction and a conclusion with appropriate references and a bibliography'.

Although learning outcomes are designed to be specific and measurable, they can still be sufficiently open-ended enough to allow for student creativity and initiative. For example,

> *On successful completion of this module, students will be able to evaluate the development of their clinical counselling skills using a reflective online portfolio.*

Learning outcomes which require creativity and originality from the student can also be useful in reducing plagiarism, for example,

> *On successful completion of this module, students will be able to demonstrate the origins of their ideas by accurately referencing sources used to develop their argument.*

Although subject learning outcomes are specific and measurable, learning outcomes can also contain more generic aspects such as key, transferable skills that relate to all graduates, whatever their subject, such as problem-solving, communication skills, and information technology skills.

References

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SOLO Taxonomy (Biggs and Collis, 1982)			Bloom's taxonomy revised by Anderson and Krathwohl (2001)		
Level and cognitive domain		Action verbs	**Level and cognitive domain**	Expectation	Action verbs
1 Pre-structural:	Students are acquiring bits of unconnected information, which have no organisation and make no sense		**1 Remembering**	Retrieving, recalling, or recognizing knowledge from memory	Define, describe, identify, label, list, match, name, outline, reproduce, select, state, recall, record, recognise, repeat, draw on, recount…
2 Uni-structural:	Simple and obvious connections are made, but their significance is not grasped.	Define, describe, list, identify, name, follow procedure…	**2 Understanding**	Showing understanding by interpreting what is known in one context when used in another context.	Estimate, explain, extend, generalise, paraphrase, rewrite, summarise, clarify, express, review, discuss, locate, report, express, identify, illustrate, interpret, represent, differentiate…
3 Multi-structural:	A number of connections may be made, but the meta-connections between them are missed, as is their significance for the whole.	Combine, describe, enumerate, list…	**3 Applying**	Carrying out or using a procedure through executing, or implementing.	Apply, change, compute, calculate, demonstrate, discover, manipulate, modify, operate, predict, prepare, produce, relate, show, solve, use, schedule, employ, sketch, intervene, practise, or illustrate…
4 Relational	The student is now able to appreciate the significance of the parts in relation to the whole.	Analyse, apply, argue, compare/ contrast, criticise, explain, justify, relate…	**4 Analysing**	Breaking material or concepts into parts, determining how the parts relate or interrelate to one another or to an overall structure or purpose.	Analyse, diagram, classify, contrast, categorise, differentiate, discriminate, distinguish, , inspect, illustrate, infer, relate, select, survey, calculate, debate, compare, criticise…
5 Extended abstract	Connections are made within the given subject area and beyond it, able to generalise and transfer the principles and ideas underlying the specific instance.	Create, formulate, generate, predict, theorise, hypothesize, reflect…	**5 Evaluating**	Making judgments based on criteria and standards through checking and critiquing.	Appraise, argue, compare, conclude, contrast, criticise, discriminate, judge, evaluate, revise, select, justify, critique, recommend, relate, value, validate, summarise…
			6 Creating	Putting elements together to form a coherent or functional whole; reorganizing elements into a new pattern or structure through generating, planning, or producing.	Compose, design, plan, assemble, prepare, construct, propose, formulate, set up, invent, develop, devise, summarise, produce …