

WHAT IS IT?

Learning outcomes are specific and clear statements of what students are expected to learn and be able to demonstrate at the completion of their course of study (Ramsden, 2003). They are typically expressed in terms of knowledge, skills and attitudes to be acquired to satisfy the educational need for which the course has been developed. Note that the term "learning outcome" is often interchanged with the term "learning objective". Traditionally, learning objectives are written from the teacher's point of view about what they intend to teach. Learning outcomes however, are written to guide what the student is expected to do and achieve in the course, thus aiming for a student-centred perspective.

WHY USE IT?

Learning outcomes that are well written can serve to:

- guide for the design of your course (activities and assessment)
- be used as a reference point to remind students how a topic or a concept relates to the bigger picture
- provide a link to ensuring alignment with graduate outcomes that focus on higher order thinking such as critical thinking and problem solving.
- Learning outcomes need to be assessable; that is, you must be able to observe an action or be able to measure or evaluate the learners' performance to determine whether the knowledge, skill or attitude has been attained.

BLOOM'S TAXONOMY

Bloom's taxonomy (1956) is a model that can be used to help write learning outcomes. It describes levels of achievement that can be attained across the domains of learning: skills (psychomotor), behaviours (affective) or knowledge (cognitive). In 2001, Anderson and Krathwohl revised Bloom's cognitive taxonomy. The revised taxonomy uses verbs to focus on student behaviour and the two higher levels of "Create" and "Evaluate" have been rearranged, with "Create" now representing the highest order of cognitive function. (Refer to the Bloom's Revised Taxonomy tip sheet for more details).

VERBS WHICH CAN DESCRIBE PERFORMANCE AT DIFFERENT SOLO LEVELS

The process of writing learning outcomes can be a control check to ensure that what you intend for students to achieve aligns with how it will be assessed and the types of activities you choose to support learning. A well-written learning outcome is a statement aimed at the student, which contains an active verb to describe what it is they will be expected to be able to do on completion of the course, such as the following:

At the end of this course you will be able to:

- distinguish between component parts of ...
- critique a variety of frameworks related to...
- apply [x] theory to the development of policy...
- construct an algorithm that ... "

Note: verbs such as "understand", "appreciate" or "know" in your learning outcome statements are too vague (i.e. they are not measurable or evaluable). Also, writing the term "demonstrate" in front of these terms will not make them clearer. Using descriptive verbs, classified against a certain cognitive level can help to clarify to the student what they are expected to do and how you will assess that they have achieved it.

Table 1 (over page) shows how learning outcomes can be written using a system that helps you classify the learning domain with levels of achievements and corresponding descriptive verbs.

CONSIDERATIONS

When you write a learning outcome, consider the

- achievement you want the learner be able to demonstrate,
- action the learner will use to demonstrate that achievement,
- result you want to evidence from the behaviour.

At university level, learning outcomes should aim to satisfy the higher order cognitive levels to ensure graduates are equipped with higher order skills such as critical thinking and problem solving (see [UQ Graduate Attributes](#)).

REFERENCES

- Anderson, L., & Krathwohl, D. (2001). A taxonomy for learning, teaching and assessing: A revision of Bloom's taxonomy of educational objectives. New York: Longman.
- Bloom, B. (1956). Taxonomy of educational objectives: The classification of educational goals. In B. S. Bloom (Ed.) Susan Fauer Company, Inc. , pp. 201-207
- Ramsden, P. (2003). Learning to Teach in Higher Education. London, UK: Kogan Page.

RESOURCES

- [Guidelines on Writing learning outcomes](#) - University of Melbourne
- [Macquarie University Teaching Learning Centre](#) - Sydney University
- [Guide to Writing Learning Outcomes](#) - University of Adelaide

| LEARNING DOMAIN | EVIDENCE OF ACHIEVEMENT (descriptive verbs) |
|-------------------------------|--|
| COGNITIVE (Knowledge) | |
| Know | Arrange, define, describe, label, list memorise, recognise, relate , reproduce , select, state |
| Understand | Explain, reiterate, reword, critique, classify, summarise, illustrate, translate, review, report, discuss, rewrite, estimate, interpret, theorise, paraphrase, reference |
| Apply | Use, apply, discover, manage, execute, solve, produce, implement, construct, change, prepare, perform, react, respond, role-play |
| Analyse | Break down, catalogue, compare, quantify, measure, test, examine, experiment, relate, graph, diagram, plot, extrapolate, value, divide |
| Evaluate | Review, justify, assess, present a case for, defend, report on, investigate, direct, appraise, argue, project-manage |
| Create | Develop, plan, build, design, organise, revise, formulate, propose, establish, assemble, integrate, re-arrange, modify |
| PSYCHOMOTOR (Physical) | |
| Perform skilfully | Assemble, build, calibrate, construct, dismantle, display, dissect, fasten, fixes, grind heat, manipulate, measure, mend , mix, organise, sketch |
| Adapt | Solve, adapt, alter, combine, revise, reorganise, rearrange integrate, develop, formulate, modify, master |
| Originate | Construct, compose, create, design, initiate, specify, manage, invent, project-manage |
| AFFECTIVE (Attitude) | |
| Value | Complete, describe, differentiate, explain, follow, form, initiate, invite, join, justify, propose, read, report, select, share, study |
| Organise values | Adhere, alter, arrange, combine, compare, complete, defend, explain, generalise, identify, integrate, modify, order, organise, prepare, relate, synthesise |
| Internalise values | Act, discriminate, display, influence, , modify, perform, practise, propose, qualify, question, revise, serve, solve, verify |

Table 1: Learning domains and taxonomies (Bloom1959; Krathwohl's and Anderson; 2001)

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