Summary Guidelines for Writing Learning Outcomes

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As part of the Bologna Process reforms, all modules and programmes throughout the European Higher Education Area are described in terms of Learning Outcomes. Learning outcomes are statements of what a student should know, understand and be able to demonstrate after completion of a process of learning. Learning Outcomes are described in relation to three domains of learning, i.e. cognitive (knowledge-based), affective (attitudes and values) and psychomotor (practical skills). Most learning outcomes are written in the cognitive domain but, depending on the subject area being studied, learning outcomes may also be written in the affective and psychomotor domains.

Writing Learning Outcomes

Bloom's taxonomy (Figure 1) is helpful when writing Learning Outcomes in the cognitive domain.

Figure 1: Learning Outcomes in the Cognitive Domain (knowing, thinking)

Ranging from the lower to the higher order thinking skills, the following table provides some suggested action verbs.

Knowledge	Comprehension	Application	Analysis	Synthesis	Evaluation
Arrange	Associate	Apply	Analyse	Argue	Appraise
Collect	Change	Assess	Appraise	Arrange	Argue
Define	Clarify	Calculate	Arrange	Assemble	Ascertain
Describe	Classify	Change	Break down	Categorise	Assess
Duplicate	Construct	Choose	Calculate	Collect	Attach
Enumerate	Contrast	Complete	Categorise	Combine	Choose
Examine	Convert	Compute	Classify	Compile	Compare
Find	Decode	Construct	Compare	Compose	Conclude
Identify	Defend	Demonstrate	Connect	Construct	Contrast
Label	Describe	Develop	Contrast	Create	Convince
List	Differentiate	Design	Criticise	Develop	Criticise
Locate	Discriminate	Discover	Debate	Design	Decide
Memorise	Discuss	Dramatise	Deduce	Devise	Defend

Knowledge	Comprehension	Application	Analysis	Synthesis	Evaluation
Name	Distinguish	Employ	Determine	Establish	Discriminate
Order	Estimate	Examine	Differentiate	Explain	Explain
Outline	Explain	Experiment	Discriminate	Formulate	Evaluate
Present	Express	Find	Distinguish	Generate	Interpret
Quote	Extend	Illustrate	Divide	Generalise	Judge
Recall	Generalise	Interpret	Examine	Infer	Justify
Recognise	Identify	Manipulate	Experiment	Integrate	Measure
Recollect	Illustrate	Modify	Identify	Invent	Predict
Record	Indicate	Operate	Illustrate	Make	Rate
Recount	Infer	Organise	Infer	Manage	Recommend
Relate	Interpret	Practice	Inspect	Modify	Relate
Repeat	Locate	Predict	Investigate	Organise	Resolve
Reproduce	Predict	Prepare	Order	Originate	Revise
Show	Recognise	Produce	Outline	Plan	Score
State	Report	Relate	Point out	Prepare	Summarise
Tabulate	Restate	Schedule	Question	Propose	Support
Tell	Review	Select	Recognise	Rearrange	Validate
	Select	Show	Relate	Reconstruct	Value
	Solve	Sketch	Separate	Relate	
	Translate	Solve	Solve	Reorganise	
		Transfer	Sub-divide	Revise	
		Use	Test	Rewrite	
				Set up	
				Summarise	

When writing Learning Outcomes:

1. Always use action verbs. Think about completing the sentence *"At the end of this module students should be able to:"*
2. Keep the sentence short. More than one action verb can be used in the same sentence.
3. Try to ensure that module Learning Outcomes range across all levels of Bloom's Taxonomy in each year of the programme.
4. Programme Learning Outcomes should map on to the appropriate level of the National Qualifications Framework.

Learning Outcomes in the Affective Domain

Bloom also proposed a taxonomy for writing Learning Outcomes in the affective domain.

Verbs include:

Appreciate, accept, assist, attempt, challenge, combine, complete, defend, demonstrate (a belief in), discuss, dispute, embrace, follow, hold, integrate, order, organise, join, share, judge, praise, question, relate, share, support, synthesise, value.

Learning Outcomes in the Psychomotor Domain

The psychomotor domain refers to practical skills. High levels of psychomotor skills are required by professionals such as surgeons, artists, musicians and laboratory scientists.

If the psychomotor domain is relevant to your subject discipline, the following list of verbs may be helpful: bend, grasp, handle, operate, manipulate, perform, reach, relax, shorten, stretch, differentiate (by touch), perform (skilfully).

Aims and Objectives

The curriculum can be described in terms of aims and objectives, which is a more teacher-centred approach. Aims are long term and general and relate to programmes. Objectives are short term, specific and relate to modules.

Aims and objectives are written using phrases such as:

- To give students an understanding of...
- To make students familiar with...
- To ensure that students know...
- To enable students to experience...

What number of Learning Outcomes?

- 3 to 9 Learning Outcomes per module (as per UCC Module policy)
- 5 to 10 Programme Learning Outcomes

Aligning Learning Outcomes to Teaching and Learning activities and to Assessment

Having written the Learning Outcomes for your students, always ask yourself how each Learning Outcome will be assessed. The Learning Outcomes we write should always be linked to teaching and learning activities and to assessment so that these various elements are aligned. This is known as constructive alignment and ensures thoughtful design of the curriculum (Figure 2).
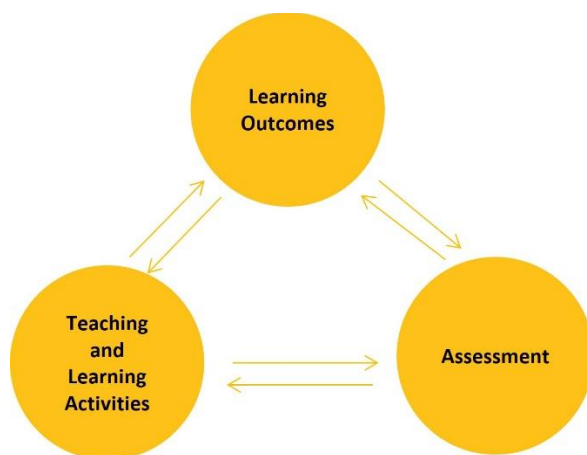

Figure 2: Constructive alignment

The key question is What must the students be able to DO in order to show that they have achieved the Learning Outcome? Details of how to check for constructive alignment using a simple three-column table are given in the online resources specified below.

Learning Outcomes are the common language in Teaching and Learning in Higher Education. ECTS credits are the common "currency" or reward that students receive for achieving the Learning Outcomes.

Resources

Visit our dedicated webpage on Learning Outcomes which includes additional video tutorials www.ucc.ie/en/cirtl/resources/learningoutcomes/

Access or download a digital handbook on 'Writing and Using Learning Outcomes – A Practical Guide'. Available from cora.ucc.ie/handle/10468/1613

To further enhance your practice, join CIRTL's level 9 programmes on Teaching and Learning in Higher Education www.ucc.ie/en/cirtl/professional-development/