Intended Learning Outcomes Guidance

This guidance has been produced to assist in planning and writing intended learning outcomes for programmes/programme specifications and modules/module specifications. It should be used in conjunction with the PQTP guidance on writing programme specifications available here: https://www.lboro.ac.uk/admin/ar/templateshop/index.htm

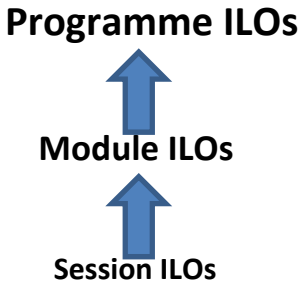
About Intended Learning Outcomes

Intended learning outcomes (ILOs) are statements which set out what students will be expected to know or be able to do by the end of a period of study/learning. This might be at the end of a programme, module or individual session. In short, they represent the knowledge, understanding and skills it is intended students should achieve and be able to demonstrate upon completion of the period of study/learning.

The purpose of ILOs is to give students an idea of what is expected of them and in effect, they should reflect the minimum standard the 'typical student' should achieve.
There are different types of ILO according to the period of study/learning. These and the relationship between each are outlined below.

> **Programme ILOs** - outline the intended learning at the end of the course of study (programme; degree). At programme level, ILOs are broad and relate to the knowledge, understanding and skills students will be expected to develop/achieve during the whole programme. They will cover a range of knowledge and skills and will be indirectly assessed by the range of assessments within and across ideally a minimum of two or modules (rather than directly and individually assessed per se). Please note - they are not a wish list or simply a summary of the programme content, neither are they just an aggregation of the module learning outcomes. Programme ILOs should relate to and support the aims of the programme and inform the module ILOs (i.e. they need to be established first).
>
> **Module ILOs** - outline the intended learning at the end of the particular unit of study (module). Module level ILOs are more specific in the knowledge, understanding and skills students will be expected to develop/achieve during the whole module and should determine its content, delivery and assessment. The ILOs will be more directly linked to the assessments for the module and should therefore be measurable. However, not all outcomes need to be assessed but they may or are likely to be, more implicitly. Module ILOs should relate to and support the programme learning outcomes.

In addition, session ILOs/learning objectives outline the intended learning in terms of the specific knowledge, understanding and skills students will be expected to develop/achieve at the end of an individual teaching episode (lecture; seminar; laboratory). Session ILOs/learning objectives should relate to and support the module learning outcomes.



ILOs also span different learning domains and can be categorised as follows:

Knowledge and Understanding - Knowledge-based ILOs are often the most common type of outcome and describe the set of knowledge that students are expected to acquire.

Subject Specific Cognitive Skills - These are application-based outcomes which describe the kinds of application or transformation students are expected to make to the knowledge they acquire. These typically require students to apply knowledge or engage with it critically to, for example, evaluate, appraise, analyse, synthesise, or debate it.

Subject Specific Practical Skills - These are skills-based outcomes which describe the subject-related skills students are expected to develop alongside knowledge acquisition. These are typically the skills that are likely to be required for employment within the subject discipline.

Key Transferable Skills - These are skills-based outcomes which describe the generic and broader (non-subject specific) skills students are expected to develop alongside knowledge acquisition. These are typically the general skills that are required for graduate employment.

Guidelines for Writing Intended Learning Outcomes

Writing appropriate ILOs is a skill and the process can take time to master.
The different types of ILO (i.e. for a programme versus module versus session) each require expressing differently. When writing them, the information in the following table should be borne in mind.

Further guidance on structuring ILOs, some example ILOs, along with an ILO checklist are provided in the appendix.

<table>
<tr><th></th><th>Programme ILOs</th><th>Module ILOs</th></tr>
<tr><td>Focus/Links</td><td>Relate the ILOs to the programme aims and to what, as a minimum, students need to know, understand and be able to do upon completion of the programme.

Link the ILOs to the compulsory modules within the programme (or to required combinations of optional modules to ensure they can be met by all students).</td><td>Relate the ILOs to what, as a minimum, students need to know, understand and be able to do upon completion of the module.

Relate the outcomes to the relevant programme outcomes.</td></tr>
<tr><td>Reference Points</td><td colspan="2">Have regard to, and as appropriate, relate the ILOs to relevant external (and internal) reference points, including:
• The appropriate level of study according to the Framework for Higher Education Qualifications (FHEQ) and the England, Wales and Northern Ireland (EWNI) descriptors
• Subject Benchmark statements
• Professional body requirements
• Personal Best (skills and attributes).</td></tr>
<tr><td rowspan="2">Format/Style</td><td>With the exception of for Knowledge and Understanding (see below), precede all ILOs with “On successful completion of this programme, students should be able to…”.

Follow the above with a suitable, specific action verb (e.g. evaluate; plan), avoiding vague or ambiguous verbs (e.g. appreciate; show awareness of).

For the Knowledge and Understanding ILOs, adopt the following format:
‘On successful completion of this programme, students should be able to demonstrate knowledge and understanding of..’ (or for Masters level programmes ‘comprehensive knowledge and understanding of…)” followed by a list of the knowledge students are expected to acquire.

Present all ILOs as numbered bullet points (K1; K2 etc).</td><td>Precede the ILOs with “On successful completion of this module, students should be able to…”.

Follow the above with a suitable, specific and measurable action verb (e.g. identify; describe; explain; evaluate; plan; etc), avoiding vague or ambiguous verbs (e.g. appreciate; show awareness of).</td></tr>
<tr><td colspan="2">Write the ILOs from the students’ perspective, in terms of what is expected of them (rather than what they will be taught).
Write in short clear sentences and avoid putting too much or too many verbs into a single ILO.
Use user-friendly language that students, colleagues and external examiners will understand – avoid jargon, abbreviations and ambiguous words or phrases
Try to future proof ILOs where possible (e.g. avoid referring to very specific or technical equipment/software).</td></tr>
<tr><td rowspan="2">Level</td><td colspan="2">Pitch the ILOs at an appropriately challenging level, aiming them at the typical student. Please see section below on Pitching ILOs at the Appropriate Level.</td></tr>
<tr><td>Programme outcomes represent what students should know, understand and be able to do by the end of their studies and should therefore be sufficiently demanding (e.g. for Foundation reflect level 3 study, undergraduate programmes level 6 study, and postgraduate taught level 7 learning).</td><td>Module outcomes should become progressively more challenging from foundation/part a through to part c/d and PGT modules and the increased level of challenge should be evident within them.</td></tr>
<tr><td rowspan="2">Coverage</td><td colspan="2">Incorporate ILOs which span all learning domains (knowledge and understanding; subject-specific cognitive skills; subject-specific practical skills; and key transferable skills) and ensure a balance in the outcomes across the 4 domains.</td></tr>
<tr><td>Incorporate only the key learning/most important learning requirements within the ILOs — they do not represent a syllabus and there is therefore no need to incorporate everything students should know, understand and be able to do within the outcomes.</td><td>Incorporate only the key learning/most important learning requirements within the module— they should accurately reflect the learning and content of the module but do not need to incorporate everything students should know, understand and be able to do.</td></tr>
</table>

Pitching ILOs at the Appropriate Level

When writing ILOs it is useful to refer to Bloom's Taxonomy (see table below) as a guide which sets out six progressive levels of cognitive ability. In writing outcomes, these levels alongside the example verbs will help in ensuring that:

i) appropriate action verbs are selected for each ILO
ii) the ILO is measurable (i.e. 'assessable'), which is important for module learning outcomes
iii) the ILO is pitched at the right level.

In Bloom's hierarchy, and broadly speaking, verbs relating to the 'lower' cognitive processes (those grouped under knowledge and comprehension) will likely be more predominant and commonly used in ILOs at lower levels of study (Levels 4 and 5), while those related to 'higher' cognitive processes (such as 'synthesis' and 'evaluation') will be more likely used at Levels 6 or 7, and as students progress through their studies. There are however some important caveats to be aware of with this. For example:

- All students still require basic levels of knowledge/comprehension in order to be able to carry out higher level tasks and, whilst it is possible to recall information without understanding it, it is not feasible to expect students to apply knowledge they do not have (or can't recall). Thus, across all levels of programme, including PGT, there is still be a need for students to acquire and comprehend knowledge and information, as well as (and before they're expected to) interpret, apply and analyse it.
- The suggested verbs should not be taken as being the only ones possible, nor as fitting into only one level as some may well operate at more than one level. For example, the word 'analyse' is a higher order skill but this can be related to relatively simple or to more complex versions of the same skill.

	Level of Cognitive Ability	Simple Definition	Example Verbs
Increasing level of cognitive ability	Knowledge **Lower order thinking**	**Remembering information** *Can students recall and describe information to show what they know?*	Describe, Define, Identify, List, Name, State, Recall, Order, Recognise, Show,
	Comprehension	**Explaining Information** *Can students interpret and convey their understanding of information as well as just recall it?*	Discuss, Illustrate, Distinguish, Explain, Summarise, Extend, Review, Clarify, Interpret. Classify
	Application	**Use information in new ways** *Can students use a theory or information in different situations? Can students articulate the relevance of the information in other circumstances?*	Apply, Use, Choose, Demonstrate, Perform, Execute, Illustrate, Implement, Prepare, Modify, Solve, Write
	Analysis	**Distinguish different parts** *Can students identify and explain relationships between material? Can they break knowledge down into constituent parts and show how these relate to each other?*	Analyse, Investigate, Differentiate, Appraise, Debate, Breakdown, Calculate, Compare, Contrast, Relate, Test
	Synthesis	**Compile information into alternate solutions** *Can students take the elements of what they have learnt and put them together in a different way? Can they develop a plan or a proposal from set knowledge?*	Arrange, Categorise, Organise, Compose, Design, Construct, Explain, Develop, Manage, Rewrite
	Evaluation	**Defend ideas or concepts** *Can students make judgements about knowledge? Can they construct an argument or compare opposing views?*	Appraise, Assess, Argue, Defend, Support, Evaluate, Justify, Interpret, Measure
	Creativity **Higher order thinking**	**Produce new or original work** *Can students create a new product or point of view?*	Design, Invent, Construct, Assemble, Develop, Formulate, Generate; Produce; Write/Author

Appendix
The Structure of Learning Outcomes

A useful structure to adopt when writing many ILOs is as follows:

Describe the structures, properties and biosynthesis of nucleic acids and their role in information storage and transfer

Verbs that Define Understanding	Subject of Learning	Context of Learning
This is specifically how you would like the students to demonstrate their learning. E.g. **describe** a process; **explain** the effect of; **interpret** experimental data etc.	This is specific subject material you want the learning to demonstrate. E.g. basic structure of the genetic material; nature of chromosomes and the organisation of genomes; structures, properties and biosynthesis of nucleic acids etc.	This is in/under what context you want the learning to be demonstrated. E.g. the context can be changed: the structures, properties and biosynthesis of nucleic acids (subject) **and how they can be manipulated by biomolecular technologies (context)**

Example Module ILOs

Knowledge and Understanding

Describe key psychological concepts and theories relevant to sport and exercise participation and performance.
Identify the fundamental components of effective physical activity and exercise intervention design and evaluation relevant to community, primary health care and other settings.
Explain the major pedagogical components and principles of effective learning within the school and physical education context
Critically discuss selected psychological theories and frameworks that help understand psychological processes in in sport and exercise performance and participation.

Subject Specific Cognitive Skills

Evaluate research evidence relating to the psychological outcomes of sport and exercise
Investigate the relationship between physical activity, immune system integrity and health and its significance to the health sector.
Debate the role and importance of technology and performance analysis in the coaching and performance context.
Interpret current educational and sports policies with respect to their implications for schools and physical education.
Critically appraise the evidence concerning the associations between physical activity, sedentary behaviour and health outcomes in different population groups.
Critically evaluate the systems and practices in place that may reduce risk of injury across both sport and non-sport environments.

Subject Specific Practical Skills

Design and evaluate a psychologically informed exercise intervention applicable to a specific population group and context.
Analyse different joint complexes, movements and the specific muscles involved in these and their application to different sports, techniques, skills and activities.
Use a range of current laboratory measurement and analysis techniques relevant to the study of exercise physiology, sports nutrition and exercise for health.
Apply a range of pedagogical skills, models and teaching styles to promote effective learning and performance within the practical sporting/coaching context.
Plan a specific recovery strategy post-injury based on evidence and principals of a staged recover and return to activity/play for a given individual and situation.

Key Transferable Skills
Describe and record their own strengths and areas for development in relation to academic, professional and personal skills and selected elements of Personal Best.
Identify and set measurable goals for their own development.
Select and use appropriate IT packages for acquiring, processing and presenting different types of information.
Apply principles of good academic scholarship and ethical practice to their own work.
Identify and critically analyse information from a range of sources.
Communicate complex ideas clearly, accurately and concisely both verbally and in writing.

Programme/Module ILOs Checklist

Programme ILOs		Module ILOs	
Is each Programme ILO		**Is each Module ILO**	
clear and specific?		clear and specific?	
included under the appropriate domain category? (i.e. knowledge and understanding is restricted to this domain; the distinction between subject-specific and generic skills is clear)		included under the appropriate domain category? (i.e. knowledge and understanding is restricted to this domain; the distinction between subject-specific and generic skills is clear)	
student focussed? (i.e. focussed on what will be learned rather than what will be taught)		student focussed? (i.e. focussed on what will be learned rather than what will be taught)	
		observable/measurable? (i.e. include assessable outcome verbs avoiding vague terms such as know and understand; appreciate)	
Does each ILO:		**Does each ILO:**	
include an action verb?		include an action verb?	
represent an outcome, not a process?		represent an outcome, not a process?	
include one/two rather than multiple action verbs?		include one/two rather than multiple action verbs?	
Collectively, are the learning outcomes		**Collectively, are the learning outcomes**	
closely and fully aligned to the programme aims?		aligned with the learning outcomes for the programme?	
reflective of the nature, scope and breadth of learning required?		reflective of the nature, scope and breadth of learning required?	
		closely aligned with and fully reflective of the module content?	
appropriate in number?		appropriate in number?	
adequately balanced across the 4 learning domains?		adequately balanced across the 4 learning domains?	
pitched at the appropriate level?		pitched at the appropriate level?	
		progressive in level from part a through to part c/d modules (as appropriate)	

Useful References

Anderson. L. W., Krathwohl. D. R, et al. (eds) (2001) A Taxonomy for Learning, Teaching and Assessing. London, Longman.

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