

## Guideline for writing and using intended learning outcomes

### Why learning outcomes are important

Good written intended learning outcomes aren't just administrative devices. They support and guide good teaching and learning. Learning outcomes can:

- Provide a basis for a dialogue in a team of lecturers about the purpose of the course;
- help lecturers to define the assessment method and criteria ;
- give clear indications to students about what the course entails, what they are expected to do while studying the course, and how their learning will be assessed.

### Definition of intended learning outcomes

- Intended learning outcomes are statements of what a learner is expected to know, understand and/or be able to demonstrate after successful completion of a process of learning<sup>1</sup>.
- Course learning outcomes are statements that specify the minimum requirements at the point of assessment for the award of credits for that course.
- Course learning outcomes are threshold requirements for successful completing the course. That means that course learning outcomes should be achievable and assessable.
- The general guidance in the literature is that there should be five to eight intended learning outcomes for a course.

### Writing good learning outcomes

A good written learning outcome is, amongst other things:

Active – it describes what students can do

Attractive – students want to achieve it

Comprehensible – students and other lecturers know what it means

Appropriate – to the student's current goals and career plans

Attainable – most students will mostly meet it, with due effort

Assessable – we can see if it has been achieved

Visible – in the course guide and Study Handbook

A good written learning outcome starts with the phrase:

'After successful completion of this course students are expected to be able to'.

This start phrase is followed by one action verb, followed by the object of the verb and followed by a phrase that gives the context.

The use of the correct verbs is the key to successful writing of learning outcomes.

The action verb must be unambiguous, clear and assessable. The action verb relates to the domain of learning (see for more information the paragraph Domain and level of learning).

The object of the learning outcome in the cognitive domain identifies the knowledge on which or with what the student is acting. If the learning outcome is about skills than the object may describe the way the skill is performed. If the learning outcome is about attitude than the object may describe in which situation the attitude is performed.

The context of the learning outcome describes the nature (or the standards) of the performance of the students that is required as evidence that the learning outcome is achieved. Since this is the component that mainly provides the main link to assessment criteria its presence is important.

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<sup>1</sup> Definition of the European Commission, 2006.

## Domain and level of learning

Three domains of learning can be identified<sup>2</sup>:

- knowledge (sometimes called cognitive skills): cognitive domain
- physical skills involving co-ordination of the brain and muscular activity: psycho-motor domain
- attitudes, values and feelings: affective domain

At University level in almost all courses learning outcomes in the cognitive domain are by far most important. Therefore we only elaborate learning outcomes in the cognitive domain in this memo<sup>3</sup>.

Cognitive domain: knowledge

Within the cognitive domain (knowledge) six levels can be distinguished<sup>4</sup>: remember, understand, apply, analyze, evaluate and create. These six levels relate to six levels of thought or cognitive processes: from least complex to most complex. These levels can be identified by examining the verb in the learning outcome.

level	action verb <sup>5</sup>	definition
6. create ↑	create design construct compose	Put elements together to form a coherent or functional whole; reorganize elements into a new pattern or structure
5. evaluate ↑	critique appraise judge assess	Make judgements based on criteria and standards
4. analyze ↑	analyze contrast distinguish deduce	Break material into its consistent parts and determine how the parts relate to one another and to an overall structure or purpose
3. apply ↑	apply use execute calculate practice	Carry out or use a procedure in a given situation
2. understand ↑	explain compare infer summarize classify exemplify interpret	Construct meaning from instructional messages, including oral written, and graphic communication
1. remember ↑	recall retrieve recognize identify	Retrieve relevant knowledge from long-term memory

<sup>2</sup> Bloom, B.S. (ed.) (1956), Taxonomy of educational objectives.

<sup>3</sup> For more information on learning outcomes in the psycho-motor and affective domain or support in writing good learning outcomes: Jan Steen (Education Institute)

<sup>4</sup> Anderson, L.W. and Krathwohl, D.R. (2001), A taxonomy for learning, teaching and assessing; a revision of Bloom's taxonomy of educational objectives.

<sup>5</sup> In this column you will find examples of action verbs that can be used in learning outcomes.

## Annex Expanded Taxonomy of Learning

<b>Taxonomy</b>	<b>Definition</b>	<b>Related LEARNING VERBS</b>	<b>What the Student Does</b>	<b>What the Teacher Does</b>	<b>Assessments</b>
<b><u>Remember</u></b>	Recall specific bits of information	<b>Tell, list, describe, name, repeat, remember, recall, identify, state, select, match, know, locate, report, recognize, observe, choose, who, what, where, when, cite, define, indicate, label, memorize, outline, record, relate, reproduce, underline</b>	Responds Absorbs Remembers Recognizes	Directs Tells Shows Examines	Students recognize, recall or find information.
<b><u>Understand</u></b>	Construct meaning from information	<b>Explain, restate, find, describe, review, relate, define, clarify, illustrate, diagram, outline, summarize, interpret, paraphrase, transform, compare similarities and differences, derive main idea, arrange, convert, defend, discuss, discuss, estimate, extend, generalize, give examples, locate, report, translate</b>	Explains Translates Demonstrates Interprets Summarizes	Demonstrates Listens Questions Compares Examines	Students organize previously learned material, rephrase it, describe it in their own words, use it for making comparisons, change from one form of representation to another.
<b><u>Apply</u></b>	Use methods, concepts, principles, and theories in new situations	<b>Apply, practice, employ, solve, use, demonstrate, illustrate, show, report, paint, draw, collect, dramatize, classify, put in order, change, compute, construct, interpret, investigate, manipulate, modify, operate, organize, predict, prepare, produce, schedule, sketch, translate</b>	Solves novel problems Demonstrates Uses knowledge constructs	Shows Facilitates Observes Criticizes	Students use previously learned information in order to solve a problem or to complete familiar or unfamiliar tasks.
<b><u>Analyze</u></b>	Identify how parts relate to one another or to a larger structure/purpose	<b>Analyze, dissect, detect, test, deconstruct, discriminate, distinguish, examine, focus, find coherence, survey, compare, contrast, classify, investigate, outline, separate, structure, categorize, solve, diagram, determine evidence and conclusions, appraise, break down, calculate, criticize, debate, experiment, identify, illustrate, infer, inspect, inventory, question, relate, select</b>	Discusses Uncovers Lists Dissects Compares and contrasts	Probes Guides Observes Acts as a resource	Students will 1) identify reasons, causes, & motives; 2) consider available evidence to reach a conclusion, inference or generalization; 3) analyze a conclusion, inference or generalization to find supporting evidence.
<b><u>Evaluate</u></b>	Judge the value of something based on criteria, processes, or standards	<b>Coordinate, judge, select/choose, decide, debate, evaluate, justify, recommend, verify, monitor, measure, the best way, what worked, what could have been different, what is your opinion, test, appraise, assess, compare, conclude, contrast, criticize, discriminate, estimate, explain, grade, interpret, rate, relate, revise, score, summarize, support, value</b>	Judges Disputes Forms opinions	Accepts Lays bare the criteria Harmonizes	Students judge the merit and value of an idea, a solution to a problem, an aesthetic work, etc.
<b><u>Create</u></b>	Generate a coherent functional whole; recognize new patterns	<b>Create, hypothesize, design, construct, invent, imagine, discover, present, deduce, induce, bring together, compose, pretend, predict, organize, plan, modify, improve, suppose, produce, set up, what if, propose, formulate, solve (more than one answer), arrange, assemble, categorize, collect, combine, devise, explain, generate, manage, perform, prepare, rearrange, reconstruct, relate, reorganize, revise, argue for</b>	Generate Hypothesize Plan Design Produce Construct Argues	Reflects Extends Analyzes Evaluates	Students will 1) produce original work or communication; 2) make predictions; 3) solve problems; 4) invent, hypothesize, devise a procedure; argue for a position; present a work of art or music to be juried