Writing and Using Learning Outcomes – Everything you need to know!

Presentation 2
Vienna 25 April 2023
Background information for Breakout Session Workshop *Writing and Using Learning Outcomes – everything you need to know.*

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Co-funded by the European Union

1. How do I use Bloom's Taxonomy to write Learning Outcomes?
2. How can I assess the quality of learning outcomes?
3. What should a typical list of learning outcomes for a module (short course) look like?

How do I write Learning Outcomes?

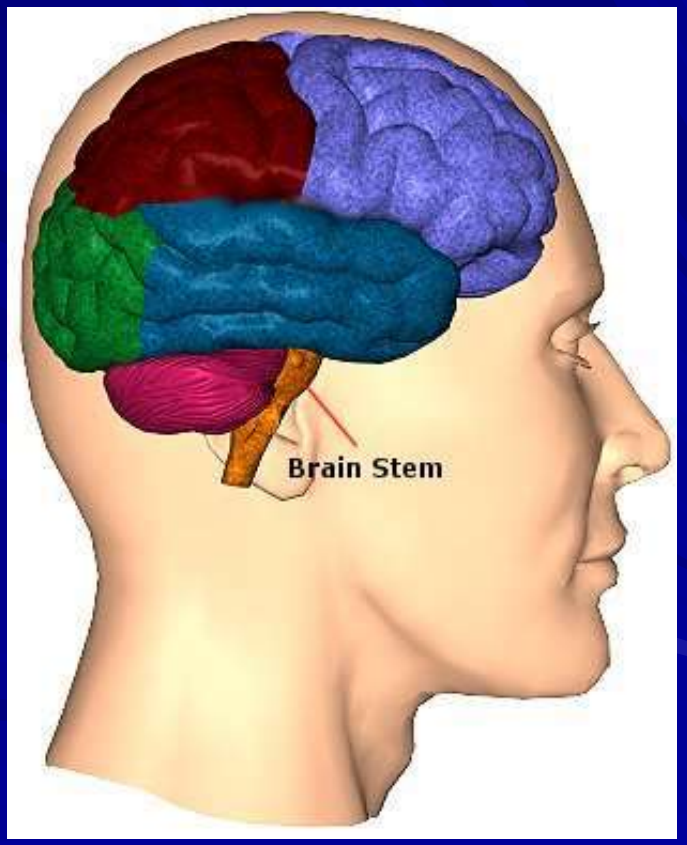
Benjamin Bloom (1913 – 1999)

- He looked on learning as a process – we build upon our former learning to develop more complex levels of understanding
- Carried out research in the development of classification of levels of thinking behaviours in the process of learning. PhD University of Chicago in 1942.
- Worked on drawing up levels of these thinking behaviours from the simple recall of facts at the lowest level up to evaluation at the highest level.

Bloom's Taxonomy of Educational Objectives

- Bloom's taxonomy (1956) is a very useful aid to writing learning outcomes.
- The taxonomy consists of a hierarchy of increasingly complex processes which we want our students to acquire.
- Provides the structure for writing learning outcomes
- Bloom's Taxonomy is frequently used by teachers in writing learning outcomes as it provides a ready made structure and list of verbs.

Bloom (1956) proposed that learning is a process that consists of six successive levels arranged in a hierarchy.



- This area is commonly called the **cognitive ("knowing" or "thinking") domain** (involving thought processes).
- Bloom suggested certain verbs that characterise the ability to demonstrate these processes.
- These verbs are the key to writing learning outcomes.
- The list of verbs has been extended since his original publication.
- The "toolkit" for writing learning outcomes!

1. Knowledge - ability to recall or remember facts without necessarily understanding them

- Use action verbs such as:

  Arrange, collect, define, describe, duplicate, enumerate, examine, find, identify, label, list, locate, memorise, name, order, outline, present, quote, recall, recognise, recollect, record, recount, relate, repeat, reproduce, show, state, tabulate, tell.

Examples: Knowledge

- *Recall* genetics terminology: homozygous, heterozygous, phenotype, genotype, homologous chromosome pair, etc.
- *Identify* and consider ethical implications of scientific investigations.
- *Describe* how and why laws change and the consequences of such changes on society.
- *List* the criteria to be taken into account when caring for a patient with tuberculosis.
- *Define* what behaviours constitute unprofessional practice in the solicitor – client relationship.
- Outline the history of the Celtic peoples from the earliest evidence to the insular migrations.
- *Describe* the processes used in engineering when preparing a design brief for a client.
- Recall the axioms and laws of Boolean algebra.

2. Comprehension - ability to understand and interpret learned information

- Use action verbs such as:

Associate, change, clarify, classify, construct, contrast, convert, decode, defend, describe, differentiate, discriminate, discuss, distinguish, estimate, explain, express, extend, generalise, identify, illustrate, indicate, infer, interpret, locate, predict, recognise, report, restate, review, select, solve, translate.

Examples: Comprehension

- ***Differentiate*** between civil and criminal law
- ***Identify*** participants and goals in the development of electronic commerce.
- ***Discuss*** critically German literary texts and films in English.
- ***Predict*** the genotype of cells that undergo meiosis and mitosis.
- ***Translate*** short passages of contemporary Italian.
- Convert number systems from hexadecimal to binary and vice versa.
- ***Explain*** the social, economic and political effects of World War I on the post-war world.
- ***Classify*** reactions as exothermic and endothermic.
- ***Recognise*** the forces discouraging the growth of the educational system in Ireland in the 19th century.
- ***Explain*** the impact of Greek and Roman culture on Western civilisation.
- ***Recognise*** familiar words and basic phrases concerning themselves….when people speak slowly and clearly.

3. Application: ability to use learned material in new situations, e.g. put ideas and concepts to work in solving problems

- Use action verbs such as:

  Apply, assess, calculate, change, choose, complete, compute, construct, demonstrate, develop, design, discover, dramatise, employ, examine, experiment, find, illustrate, interpret, manipulate, modify, operate, organise, practice, predict, prepare, produce, relate, schedule, select, show, sketch, solve, transfer, use.

Examples application

- *Construct* a timeline of significant events in the history of Australia in the 19th century.
- *Apply* knowledge of infection control in the maintenance of patient care facilities.
- *Select* and employ sophisticated techniques for analysing the efficiencies of energy usage in complex industrial processes.
- *Show* proficiency in the use of vocabulary and grammar, as well as the sounds of the language in different styles…..
- *Relate* energy changes to bond breaking and formation.
- *Modify* guidelines in a case study of a small manufacturing firm to enable tighter quality control of production.
- *Show* how changes in the criminal law affected levels of incarceration in Scotland in the 19th century.
- *Apply* principles of evidence-based medicine to determine clinical diagnoses.

4. Analysis: ability to break down information into its components, e.g. look for inter-relationships and ideas (understanding of organisational structure)

- Use action verbs such as:

Analyse, appraise, arrange, break down, calculate, categorise, classify, compare, connect, contrast, criticise, debate, deduce, determine, differentiate, discriminate, distinguish, divide, examine, experiment, identify, illustrate, infer, inspect, investigate, order, outline, point out, question, recognise, relate, separate, solve, sub-divide, test.

Examples: Analysis

- *Analyse* why society criminalises certain behaviours.
- *Compare* and contrast the different electronic business models.
- *Categorise* the different areas of specialised interest within dentistry.
- *Debate* the economic and environmental effects of energy conversion processes.
- *Identify* and *quantify* sources of errors in measurements.
- *Calculate* gradient from maps in m, km, % and ratio.
- Critically *analyse* a broad range of texts of different genres and from different time periods.
- *Compare* the classroom practice of a newly qualified teacher with that of a teacher of 20 years teaching experience.
- Calculate logical functions for coders, decoders and multiplexers.
- Recognise trends in atomic radii in the Periodic Table of the Elements.

5. Synthesis - ability to put parts together and create new ideas from old concepts

- Use action verbs such as:

Argue, arrange, assemble, categorise, collect, combine, compile, compose, construct, create, develop, design, devise, establish, explain, formulate, generate, generalise, infer, integrate, invent, make, manage, modify, organise, originate, plan, prepare, propose, rearrange, reconstruct, relate, reorganise, revise, rewrite, set up, summarise.

Examples: Synthesis

- *Recognise* and formulate problems that are amenable to energy management solutions.
- *Propose* solutions to complex energy management problems both verbally and in writing.
- Assemble sequences of high-level evaluations in the form of a program.
- Integrate concepts of genetic processes in plants and animals.
- *Summarise* the causes and effects of the 1917 Russian revolutions.
- *Relate* the sign of enthalpy changes to exothermic and endothermic reactions.
- *Organise* a patient education programme.

6. Evaluation: Ability to make a judgement of the value of material for a given purpose (Summative and Judgemental)

- Use action verbs such as:

  Appraise, argue, ascertain, assess, attach, choose, compare, conclude, contrast, convince, criticise, decide, defend, discriminate, explain, evaluate, interpret, judge, justify, measure, predict, rate, recommend, relate, resolve, revise, score, summarise, support, validate, value.

Examples: Evaluation

- Assess the importance of key participants in bringing about change in Irish history
- Evaluate marketing strategies for different electronic business models.
- Appraise the role of sport and physical education in health promotion for young people.
- Predict the effect of change in temperature on the position of equilibrium in the given reaction.
- Summarise the main contributions of Michael Faraday to the field of electromagnetic induction.
- Assess the Arrhenius acid-base theory in the light of the Bronsted-Lowry theory of acids and bases.

SUMMARY GUIDELINES FOR WRITING LEARNING OUTCOMES

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Learning Enhancement

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 (Fig.1) is helpful when writing Learning Outcomes in the cognitive domain. Ranging from the lower to the higher order thinking skills, Fig. 2 provides some suggested action verbs.

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.

Fig. 2 Action verbs in the cognitive domain

Bloom Revisited: Anderson and Krathwohl (2001)

Bloom (1956)

- Knowledge
- Comprehension
- Application
- Analysis
- Synthesis
- Evaluation

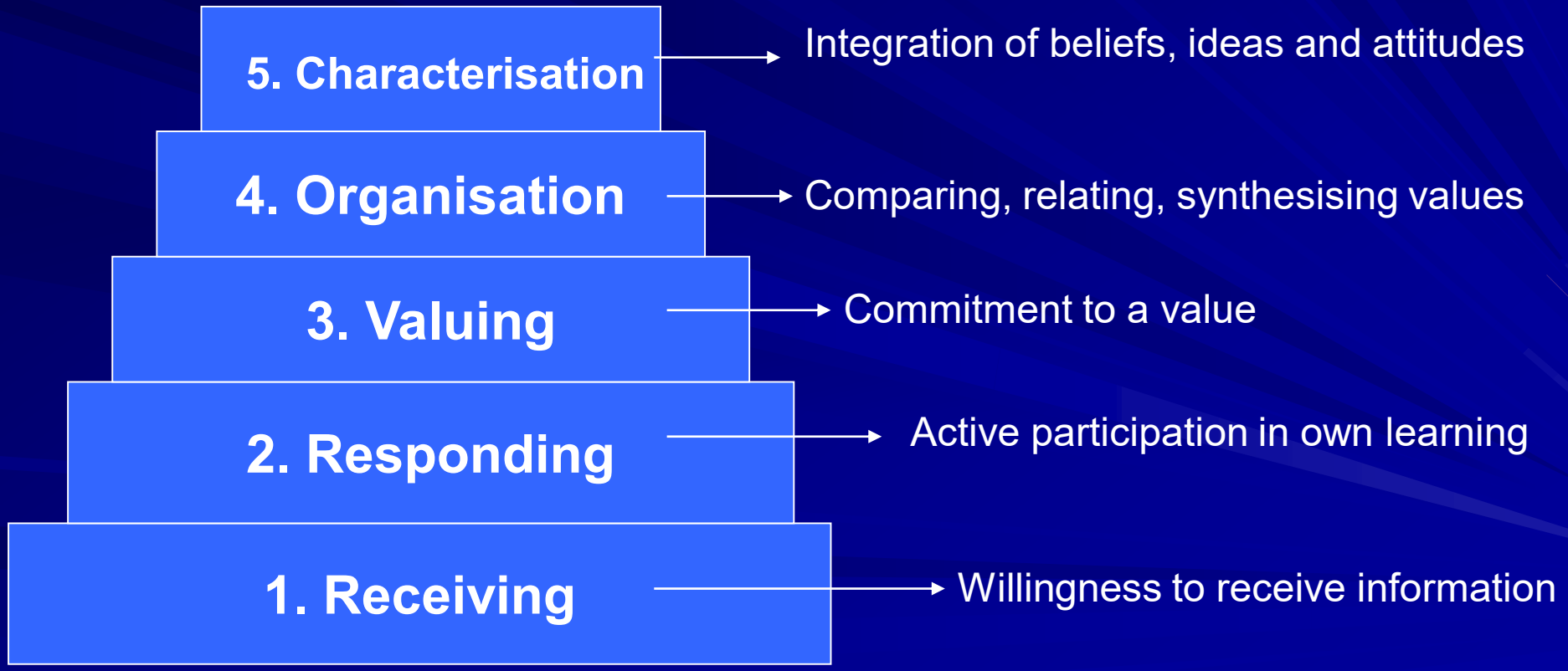
Anderson and Krathwohl (2001)

- To remember
- To understand
- To apply
- To analyse
- To evaluate
- To create

Analysis, Synthesis, Evaluation – Higher Order Thinking Skills

Two other domains in Bloom's Taxonomy

AFFECTIVE DOMAIN ("Feeling") concerned with value issues : involves attitudes.



Action verbs for affective domain

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.

Examples of Learning Outcomes in Affective Domain

- Accept the need for professional ethical standards.
- Appreciate the need for confidentiality in the professional client relationship.
- Display a willingness to communicate well with patients.
- Relate to participants in an ethical and humane manner.
- Resolve conflicting issues between personal beliefs and ethical considerations.
- Embrace a responsibility for the welfare of children taken into care.
- Participate in class discussions with colleagues and with teachers.

PSYCHOMOTOR (“Doing”) DOMAIN

Work never completed by Bloom. Involves co-ordination of brain and muscular activity Psychomotor skills involve manual dexterity and only apply in some programmes. They are important in some fields of study, e.g. high levels of psychomotor skills are required for a surgeon, an artist, or a musician.”

- action verbs for this domain: bend, grasp, handle, operate, manipulate, perform, reach, relax, shorten, stretch, differentiate (by touch), perform (skilfully), etc.

Laboratory skills

- *Operate the range of instrumentation specified in the module safely and efficiently in the chemistry laboratory.*
- *Perform titrations accurately and safely in the laboratory.*
- *Construct simple scientific sketches of geological features in the field.*

Clinical Skills

- Perform a comprehensive history and physical examination of patients in the outpatient setting and the general medical wards, excluding critical care settings.
- Perform venipuncture and basic CPR.

Presentation skills

- Deliver an effective presentation.
- Demonstrate a range of graphic and CAD communication techniques.
- Perform basic voice and movement tasks (theatre studies).
- Design a well-illustrated poster presentation to summarise the research project.

- **Module Title**: Dental Surgery – 5th Year Dental Students
- **Module Code**: DS5001

On successful completion of this module, students should be able to:

- Summarise relevant information regarding the patient's current condition to generate a differential diagnosis
- Formulate an appropriate treatment plan and justify the proposal giving due consideration to patient expectations and limitations
- Arrange appropriate tests and demonstrate the ability to interpret tests and reports
- Administer local anaesthetics safely and perform basic dento-alveolar surgical procedures in a professional manner showing good clinical governance
- Recognise, evaluate and manage medical and dental emergencies appropriately
- Differentiate between patients that can/can not be safely treated by a GDP
- Manage competing demands on time, including self-directed learning & critical appraisal
- Master the therapeutic and pharmacological management of patients with facial pain and oro-facial disease

(Learning outcomes written by Dr. Eleanor O'Sullivan)

Key Points

- **Learning outcomes are statements of what a student should know, understand and be able to demonstrate after completion of a process of learning .**
- **Must start with an action verb.**
- **Use short simple sentences.**
- **Avoid stative verbs such as know, understand and appreciate.**

The challenge of beginning the task of writing Learning Outcomes

- It is vital that learning outcomes are clearly written so that they are understood by students, colleagues and external examiners.
- When writing learning outcomes it may be helpful to you if you focus on what you expect students to be able to demonstrate upon completion of the module or programme.
- It is standard practice to list the learning outcomes using a phrase like “On successful completion of this module, students should be able to:” [list of learning outcomes]
- Avoid complicated sentences. If necessary use one than one sentence to ensure clarity.
- General recommendation: 5 – 8 learning outcomes per module.
- Avoid certain words…….

Words of advice

- *Learning outcomes are specific statements of what students should know or be able to do as a result of the learning. They are statements describing observable behaviour and therefore must use "action verbs".* (Morss and Murray 2005)
- *The key word is DO and the key need in drafting learning outcomes is to use active verbs*. (Jenkins and Unwin 2005)
- *Learning outcomes are statements describing observable behaviour and therefore must use "action verbs". Words like "appreciate" and "understand" do not help students because there are so many interpretations of their meaning*. (Bologna Process Coordination Office 2007).
- *Avoid ambiguous verbs such as 'understand', 'know', 'be aware' and 'appreciate'*. (Sheffield Hallam Guide).
- *Issues to avoid when writing learning outcomes: Use of ambiguous words and phrases. This refers to the use of vague terms like 'know', 'understand', 'learn', 'be familiar with', 'be exposed to', 'be acquainted with', 'be aware of', 'appreciate',* etc. (EASO Guide 2018)
- *Write each learning outcomes with an action (doing) verb that lends itself to being demonstrated - do not use verbs such as 'appreciate', 'understand', 'know'. Instead think about what assessment you will used to try and measure the outcome*. (NHS 2018)
- *What does 'appreciate' mean - to know a little bit about, to applaud, to be thankful for? How do we measure 'understanding' and how do students 'demonstrate' that to us - by discussing, debating, applying tools and / or concepts? In our view, these are terms which do not help students because there are so many interpretations of their meaning*. (Morss and Murray 2005)

Words of advice …..

- "The key word is DO and the key need in drafting learning outcomes is to use active verbs". (Jenkins and Unwin, Fry et al.)
- "They [Learning Outcomes] are statements describing observable behaviour and therefore must use 'action verbs'"… Words like "appreciate" and "understand" do not help students because there are so many interpretations of their meaning. It is more transparent and helpful to be specific about expectations (Morss and Murray).
- Avoid verbs such as "understand," "know," "be familiar with." (Osters and Tiu)
- Learning Outcomes are statements describing observable behaviour and therefore must use 'action verbs'… Words like "appreciate" and "understand" do not help students because there are so many interpretations of their meaning. It is more transparent and helpful to be specific about expectations.
- Avoid verbs like "know", "learn", "understand", "be familiar with", "be exposed to", "be aware" and "appreciate". (Bologna Office Coordination Office)
- "Try to avoid ambiguous verbs such as "understand", "know", "be aware" and "appreciate". (Sheffield Hallam Guide).
- "Care should be taken in using words such as 'understand' and 'know' if you cannot be sure that students will understand what it means to know or understand in a given context" (Univ NSW).
- Certain verbs are unclear and subject to different interpretations in terms of what action they are specifying…… These types of verbs should be avoided: know, become aware of, appreciate, learn, understand, become familiar with. (American Association of Law Libraries).
- EASO Guide to Writing Learning Outcomes Use of ambiguous words and phrases. This refers to the use of vague terms like *know*, *understand*, *learn*, *be familiar with*, *be exposed to*, *be acquainted with*, *be aware of*, *appreciate*, etc.
- Do not use verbs such as '*appreciate*', '*understand*', '*know*'. Instead think about what assessment you will use to try and measure the learning outcome. (NHS UK)
- Words such as *know*, *understand*, *appreciate*, *become familiar with*, *be aware of* and *comprehend* are described as "ambiguous" verbs and should not be used in writing learning outcomes. Cedefop (2017).

Common errors in writing using learning outcomes

- Using the term “understand”. Instead of this term, ask the students to show their understanding by using a learning outcome containing action verbs such as explain, discuss, illustrate, solve, etc.
- Using the term “appreciate” in the cognitive domain. Instead of this term, ask the students to show their appreciation of a specific concept by asking them to evaluate, discuss, outline or summarise.

Checklist for writing learning outcomes for modules

- Have I begun each outcome with an action verb?
- Have I avoided terms like *know*, *understand*, *learn*, *be familiar with*, *be exposed to*, *be acquainted with*, *be aware of* and *appreciate*?
- Have I included learning outcomes across the range of levels of Bloom's Taxonomy?
- Are my outcomes observable and measurable?
- Do all the outcomes fit within the aims and content of the module?

Writing Programme Learning Outcomes

- Programme learning outcomes are learning outcomes that describe the essential knowledge, skills and attitudes that it is intended that graduates of the programme will be able to demonstrate.
- The rules for writing learning outcomes for programmes are the same as those for writing learning outcomes for modules.
- The general guidance in the literature is that there should be 5 – 10 learning outcomes for a programme and that only the minimum number of outcomes considered to be essential be included.

Two types of Programme Learning Outcomes

1. The first type of learning outcome refers to those learning outcomes that can be assessed during the programme, i.e. within the various modules.
2. “Aspirational” or “desirable” learning outcomes indicate what a good quality student would be expected to achieve by the end of the programme. This type of learning outcome may not be assessed at all but gives an indication to employers and other agencies the type of standard of practical performance that graduates of the programme will display at the end of the programme.

Example 1 Programme Learning Outcomes [Undergraduate degree in Science Education]

On successful completion of this programme, students should be able to:

- Identify the key characteristics of excellent teaching in science in terms of subject knowledge and pedagogy
- Apply the scientific knowledge and pedagogical skills gained in the programme to prepare lesson plans of the highest standard
- Recognise and apply the basic principles of classroom management and discipline.
- Develop comprehensive portfolios of lesson plans that are relevant to the science curricula in schools.
- Evaluate the various theories of Teaching and Learning and apply these theories to assist in the creation of effective and inspiring science lessons.
- Critically evaluate the effectiveness of their teaching of science in the second-level school system.
- Display a willingness to co-operate with members of the teaching staff in their assigned school.
- Foster an interest in science and a sense of enthusiasm for science subjects in their pupils.
- Synthesise the key components of laboratory organisation and management and perform laboratory work in a safe and efficient manner.
- Communicate effectively with the school community and with society at large in the area of science education.

Example 2 Programme Learning Outcomes [Undergraduate Degree in Engineering]

On successful completion of this programme, students should be able to:

- Derive and apply solutions from knowledge of sciences, engineering sciences, technology and mathematics.
- Identify, formulate, analyse and solve engineering problems.
- Design a system, component or process to meet specified needs and to design and conduct experiments to analyse and interpret data.
- Work effectively as an individual, in teams and in multi-disciplinary settings together with the capacity to undertake lifelong learning.
- Communicate effectively with the engineering community and with society at large.

Example 3 Programme Learning Outcomes [Masters in Computer Science Degree]

On successful completion of this programme, students should be able to:

- Perform problem solving in academic and industrial environments.
- Use, manipulate and create large computational systems.
- Work effectively as a team member.
- Organise and pursue a scientific or industrial research project.
- Write theses and reports to a professional standard, equivalent in presentational qualities to that of publishable papers.
- Prepare and present seminars to a professional standard.
- Perform independent and efficient time management.
- Use a full range of IT skills and display a high standard of computer literacy.

Example 4 Programme Learning Outcomes [Masters in Education Degree]

On successful completion of this programme, students should be able to

- Behave in a professional manner with members of the teaching placement school communities and with all other professionals in the context of the Teaching Council's Code of Practice.
- Critically evaluate the various theories of Teaching and Learning, including curriculum design, and apply these theories to assist in teaching effective and inspiring lessons in the classroom.
- Select from complex and advanced skills in the field of Education and develop new skills, including those of pedagogy and assessment practices, to a high level.
- Synthesise the key components of some areas of current research in the field of Education and carry out a small scale research project to a professional standard.
- Develop comprehensive portfolios that chart their progress as reflective practitioners carrying out research in the areas of professional tasks and experiences in their placements schools and at university.
- Discuss topics in the field of Education to demonstrate a critical awareness of current problems and new insights informed by development in this area.
- Appraise the role of the teacher in the modern classroom to help manage their own learning and professional development.
- Foster an interest in and enthusiasm for their specialist subject among their pupils.
- Display a willingness to participate in all aspects of the programme in a spirit of co-operation and enthusiasm.
- Communicate effectively key aspects of knowledge and understanding in the field of Education to specialist and non-specialist audiences.

Example 5 Undergraduate degree in the teaching of the Irish language

On successful completion of this programme students should be able to:

- Identify the key characteristics of excellent teaching in Irish and their second specialist subject and teach these subjects in an enthusiastic and inspirational manner.
- Display proficiency in the area of grammar and syntax in the writing of Irish and, where another language is selected, in the writing of that other language.
- Demonstrate fluency in spoken Irish and, where another language is selected, fluency in that other language also.
- Articulate a comprehensive understanding of the poetry and prose literatures of Modern Irish and, where another language is selected, a comprehensive understanding of the poetry and prose literatures of that other language.
- Recognise and apply the basic principles of classroom management and discipline.
- Synthesise the various theories of Teaching, Learning and Assessment and apply these theories to develop comprehensive portfolios of lesson plans that are relevant to the curricula of their specialist subjects in the second-level classroom.
- Critically evaluate the effectiveness of their teaching in the second-level school system and develop strategies and skills to enhance their own professional development.
- Display a willingness to co-operate with members of the teaching staff in their assigned school during teaching placement.
- Communicate effectively with the school community and with society at large in the area of the promotion of Irish and their second specialist subject.

Examples of Language used when writing Programme Learning Outcomes

Knowledge

- Discuss a wide variety of….
- Outline a broad range of fundamental concepts…..
- Describe the theories and concepts in the field of….
- Identify a range of processes used in….
- Discuss relationships between the various areas of…..
- Examine current theory in the area of…
- Display proficiency in the area…..
- Demonstrate fluency in spoken…..
- Articulate a comprehensive understanding in the area of.
- Critique modern theories in the area of ….
- Examine and evaluate current problems in the area of ….. etc.

Is it permitted to have a number of action verbs in a learning outcome?

- More than one action verb is acceptable in both module learning outcomes and programme learning outcomes.
- For module learning outcomes – if you use more than one, take both verbs from same region of Bloom's Taxonomy (lower order or higher order thinking skills).
- For programme learning outcomes, there is no problem about several verbs in one learning outcome since the learning outcome is describing the synthesis of module learning outcomes rather than the programme learning outcome itself being assessed.

- **PLO 5** Integrate the range of acquired generic, transferable skills (e.g. business skills, communication skills, numerical and statistical skills, ITC, problem- solving, decision making, management, team-work, innovation and entrepreneurship) necessary for graduates working as a Professional Toxicologists.

- **PLO 6 I**nitiate research proposals, interpret and critically evaluate research related publications in the domain of Toxicology and demonstrate leadership skills as part of an interdisciplinary scientific research/industrial or management group.

- **PLO 7** Contribute professionally to the future development of the field of Toxicology through applied study or further research.

- **PLO 8** Critically appraise scientific research and apply integrated approaches to accurately assess and critically evaluate the work of scientific peers.

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Making programme learning outcomes explicit for students of process and chemical engineering

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ABSTRACT

There is a global shift in education from solely content-driven teaching to teaching that takes learning outcomes into account. This movement underpins much of the educational reform in the area of engineering education. Programme learning outcomes for degrees in engineering education are more commonplace as more and more professional accrediting bodies require fulfillment or compliance with prescribed learning outcomes. However, the students may not be presented with these learning outcomes as they are often "hidden" in documentation submitted by institutions for accreditation purposes and hence may not be divulged to students. Undergraduate students (2006–2008) taking the BE degree programme in Process & Chemical Engineering at UCC were first surveyed to assess their level of knowledge of the learning outcomes concept and of the degree programme learning outcomes. The contents of two documents used in applications for accreditation by professional accreditation bodies as well as professional Institution guidelines were reviewed to formulate the degree programme learning outcomes which were presented to the students. These students were then surveyed after the presentation. The results of the questionnaire completed by students demonstrated a major improvement in their knowledge of both the concept of learning outcomes and also of the degree programme learning outcomes. It also showed that the students found the session to be of overall beneficial value.

"Writing Learning Outcomes is a Process not an Event"

Breakout Session- Workshop Writing Module Learning Outcomes

1. Each of you will write three learning outcomes in the cognitive domain for a course you teach or would like to teach. Refer to the "postcard" document and slides from presentation on writing Learning Outcomesto help you select the appropriate active verbs. If you are an administrator, please write three learning outcomes that you would expect a person whom you have trained to carry out your duties to be able to perform.
2. You will discuss these learning outcomes with your colleagues and modify them if necessary as a result of the discussion.
3. You will write one learning outcome on each of the three POST IT notes supplied.
4. You will put each of the POST IT notes in the appropriate section of a large chart which has been divided into the 6 areas of Bloom's Taxonomy (Cognitive Domain).
5. Each group will report on its work as part of a general discussion.