

In the following section, each stage of Bloom's taxonomy is considered and the corresponding list of verbs relating to each stage is proposed. Since learning outcomes are concerned with what the students can **do** at the end of the learning activity, all of these verbs are action (active) verbs.

Action verbs**3.1.1 Knowledge**

Knowledge may be defined as the ability to recall or remember facts without necessarily understanding them. Some of the action verbs used to assess knowledge are as follows:

Assessing knowledge

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

Some examples of learning outcomes for courses in various disciplines that demonstrate evidence of knowledge include the following:

Demonstrating evidence of 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.
- *Describe* the processes used in engineering when preparing a design brief for a client.

Note that each learning outcome begins with an action verb.

3.1.2 Comprehension

Comprehension may be defined as the ability to understand and interpret learned information. Some of the action verbs used to assess comprehension are as follows:

Assessing comprehension

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, paraphrase, predict, recognise, report, restate, rewrite, review, select, solve, translate.

Demonstrating evidence of comprehension

Some examples of learning outcomes that demonstrate evidence of comprehension are:

- *Differentiate* between civil and criminal law
- *Identify* participants and goals in the development of electronic commerce.
- *Predict* the genotype of cells that undergo meiosis and mitosis.
- *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.

3.1.3 Application**Assessing application**

Application may be defined as the ability to use learned material in new situations, e.g. put ideas and concepts to work in solving problems. Some of the action verbs used to assess application are shown as follows:

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

Demonstrating evidence of application

Some examples of learning outcomes that demonstrate evidence of application are:

- *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.
- *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.

3.1.4 Analysis

Analysis may be defined as the ability to break down information into its components, e.g. look for inter-relationships and ideas (understanding of organisational structure). Some of the action verbs used to assess analysis are as follows:

Assessing analysis

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, relate, separate, sub-divide, test.

Some examples of learning outcomes that demonstrate evidence of analysis are:

Demonstrating evidence of analysis

- *Analyse* why society criminalises certain behaviours.
- *Compare* and contrast the different electronic business models.
- *Debate* the economic and environmental effects of energy conversion processes.
- *Compare* the classroom practice of a newly qualified teacher with that of a teacher of 20 years teaching experience.
- *Calculate* gradient from maps in m, km, % and ratio.

3.1.5 Synthesis

Synthesis may be defined as the ability to put parts together. Some of the action verbs used to assess synthesis are the following:

Assessing synthesis

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

Demonstrating evidence of synthesis

Some examples of learning outcomes that demonstrate evidence of synthesis are:

- *Recognise* and formulate problems that are amenable to energy management solutions.
- *Propose* solutions to complex energy management problems both verbally and in writing.
- *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.

3.1.6 Evaluation**Assessing evaluation**

Evaluation may be defined as the ability to judge the value of material for a given purpose. Some of the action verbs used to assess evaluation are:

Appraise, ascertain, argue, assess, attach, choose, compare, conclude, contrast, convince, criticise, decide, defend, discriminate, explain, evaluate, grade, interpret, judge, justify, measure, predict, rate, recommend, relate, resolve,

Demonstrating evidence of evaluation

The following are some examples of learning outcomes that demonstrate evidence of evaluation are:

- Assess the importance of key participants in bringing about change in Irish history Evaluate marketing strategies for different electronic business models.
- Summarise the main contributions of Michael Faraday to the field of electromagnetic induction.
- Predict the effect of change of temperature on the position of equilibrium.
- Evaluate the key areas contributing to the craft knowledge of experienced teachers.

Note that the verbs used in the above six categories are not exclusive to any one particular category. Some verbs appear in more than one category. For example, a mathematical calculation may involve merely applying a given formula (application – stage 3) or it may involve analysis (stage 4) as well as application.