Using Bloom's revised taxonomy
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Contents

Introduction

This document looks at 'Bloom's revised taxonomy', in particular:

- the six levels of Bloom's revised taxonomy and the descriptions for each of the levels
- the component parts of a learning outcome (or objective)
- keywords associated with each level
- an example objective for each keyword
- a table showing: level, keywords, assessment/activity examples, suggestions for related activities and examples of outputs.

Bloom's revised taxonomy

The six levels of cognitive learning of Bloom's Taxonomy as revised by Anderson and Krathwohl (2001) are:

1. Remembering
2. Understanding
3. Applying
4. Analysing
5. Evaluating
6. Creating

The taxonomy represents the progression from lower to higher order learning skills; that is, moving from the skill of remembering through the other levels to the skill of creating.

Keyword descriptions

1. **Remembering**:
   the ability to recall, recognise or remember information.
2. **Understanding**:
   the ability to comprehend meaning by interpreting what has been learned; to restate/rephrase information in one's own words.
3. **Applying**:
   the ability to use or apply knowledge in a context different from the one in which it was learned; to put theory into practice; to apply knowledge to real circumstances and situations.
4. **Analysing**:
   the ability to break information down into its component parts to explore relationships; to interpret elements, structure, organisational principles, construction and internal relationships.
5. **Evaluating**:
   the ability to make decisions based on in-depth reflection and criticism; to assess the effectiveness of whole concepts in relation to values, outputs, efficacy and viability.
6. **Creating**:
   the ability to create new ideas, structures, systems, models and approaches; to use creative and critical thinking.

Bloom's taxonomy (revised)

The structure of a learning outcome

Introduction   +   verb   +   object   +   modifier (as appropriate)

Remembering

Introduction	Verb	Object	modifier
On completion of/at the end of this module/unit/topic/activity, you/learners will be able to	arrange	the food items from high to low	in order of their calorific values.

Understanding

Introduction	Verb	Object	modifier
… , you/learners will be able to	compare and contrast	different weather systems	using computer generated data.

Applying

Introduction	Verb	Object	modifier
… , you/learners will be able to	apply	legal and ethical principles	to the development of a code of conduct.

Analysing

Introduction	Verb	Object	modifier
… , you/learners will be able to	determine	the key elements of	a sound business plan.

Evaluating

Introduction	Verb	Object	modifier
… , you/learners will be able to	evaluate	the financial viability of	a business.

Creating

Introduction	Verb	Object	modifier
… , you/learners will be able to	create	a protocol	for conducting an job interview.

Bloom's taxonomy (revised)

Objective examples for each keywords

Remembering

Keywords	Objectives
Arrange	**Arrange** this list into a logical order.
Define	**Define** 'leadership'.
Describe	**Describe** the key features of event driven programs.
Identify	**Identify** the poisonous mushrooms in this list.
Label	**Label** the diagram of an amoeba.
List	**List** the stages of mitosis.
Locate	**Locate** the danger zones on the map below.
Name	**Name** 5 members of Parliament.
Recognise	**Recognise** the symptoms of stress from the following description.
Select	**Select** 3 items of equipment essential for rock climbing.
State	**State** the difference between an atom and its isotope.

Table 1: Objectives for remembering

Understanding

Keywords	Objectives
Classify	**Classify** the shapes according to their properties.
Compare	**Compare** the characteristics of a rat with a mouse.
Estimate	**Estimate** the individual costs to plumb an average 2 bedroom flat.
Explain	**Explain** how broadband works.
Illustrate	Describe and **illustrate** three number systems.
Interpret	How can we **interpret** correlation coefficients?
Report	**Report** on your activities during the field trip.
Reword	**Reword** the sentence omitting the word 'it'.
Summarise	Write a **summary** of your findings.
Translate	**Translate** the following into German.

Table 2: Objectives for understanding

Bloom's taxonomy (revised)

Applying

Keywords	Objectives
Apply	**Apply** the principles of nutrition to support client goals.
Conduct	**Conduct** a complete check of the equipment.
Construct	**Construct** an example of a pinhole camera.
Discover	**Discover** which network interface is no longer active.
Produce	**Produce** a bifold leaflet.
Provide	**Provide** instructions on how to suture a wound.
React	How would you **react** positively to the following criticism?
Respond	Provide a suitable written **response** to the client's query.
Solve	What **solution** would you suggest to the following?
Use	**Use** a compass to draw a triangle.

Table 3: Objectives for applying

Analysing

Keywords	Objectives
Analyse	Provide a financial **analysis** of the current market.
Categorise	**Categorise** the following according to the criteria provided.
Classify	**Classify** the shapes according to the definitions provided.
Differentiate	**Differentiate** between management and leadership.
Distinguish	**Distinguish** between conformity and obedience.
Infer	What can we **infer** from double dissociations?
Integrate	**Integrate** the new rules into current procedure.
Plot	**Plot** a graph to show the connectivity between the components.
Survey	**Survey** the literature on a topic in Artificial Intelligence.

Table 4: Objectives for analysing

Bloom's taxonomy (revised)

Evaluating

Keywords	Objectives
Assess	**Assess** the relevance of the techniques used.
Check for	**Check** for symmetry with respect to both axes.
Defend	**Defend** the actions of the goverment's approach to taxation.
Determine	**Determine** the relevance of sleep to good health.
Investigate	**Investigate** the concept and process of marketing.
Justify	**Justify** budgetary expenditure for the given scenario.
Present a case for	**Present a case for** joint performance appraisal.
Reflect on	**Reflect** on what constitutes good local news coverage.
Review	**Review** current practice in providing economic aid.

Table 5: Objectives for evaluating

Creating

Keywords	Objectives
Build	**Build** a working model of an earthquake.
Create	**Create a** protocol for conducting an interview.
Design	**Design** an online checkout process.
Develop	**Develop** procedures to implement the new strategy.
Establish	**Establish** a set of ground rules for dispute management.
Modify	**Modify** the architectural drawings to incorporate a study.
Plan	**Plan** a trip to cater for the needs of a young family.
Propose	**Propose** an alternative approach to encourage the use of public transport.
Revise	**Revise** the guidelines to cater for non-native speakers.

Table 6: Objectives for creating

Reference

Anderson, L. and Krathwohl, D. (eds.) (2001) *A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives.* New York: Longman

Using Bloom's revised taxonomy

Use the information and examples in this table to help you write learning outcomes and create activities and assessments.

Level	Keywords	Assessment/activity objectives	Activity suggestions	Examples of outputs
Remembering (recall or recognition of information)	arrange, define, describe, identify, label, list, locate, memorise, name, select, state	Arrange the fruits below from high to low in order of their calorific values.	quiz, 'Googling', labelling diagrams/charts/ pictures, quoting laws/ procedures, brainstorming	definition, fact chart, social bookmarking, mind map, glossaries, list, recording
Understanding (determining meaning by interpreting what has been learned; restating on one's own words)	clarify, classify, compare, contrast, distinguish, explain, estimate, exemplify, generalise, interpret, paraphrase, predict, reword, summarise, translate	Compare and contrast the climate of the Isles of Lewis and of Shetland.	interpret or explain a given scenario, advanced 'Google' searches, matching/ predicting exercises, discussion board posts	summary, classification, paraphrases, activity report, diarys, drawing, collage, recording, photograph, blogs, annotating texts
Applying (using/applying knowledge in new contexts; putting theory into practice; solving a problem)	apply, calculate, carry out, classify, conduct, construct, implement, modify, organise, perform, prepare, produce, provide, react, relate, respond to, restructure, translate, use	Identify a suitable location where a tourist in the Highlands without their own transport could be based. Provide reasons for your choice of location.	constructing an argument, presenting a solution, reporting on an activity/event, modifying a diagram, interviewing, collaborative online work and editing, using Googlemaps	diagram, sculpture, photograph, forecast, illustration (textual/graphic), project, cartoon, filmstrip, interview, simulation, film, wikis, presentation
Analysing (breaking information into its component parts; interpreting elements, structure, organisational principles, construction and relationships)	analyse, break down, catalogue, compare, deconstruct, discriminate between, divide, examine, execute, extrapolate, implement, integrate, measure, plot, quantify, produce a graph/diagram, select, show, use, value	Select two leadership styles and provide examples of situations when they might best be employed. Provide references to support your choice.	surveys, identifying constituent parts or functions, identifying requirements, distinguish between facts and inferences,	survey/poll/questionnaire, wiki, model, argument, report, advertisement, checklist, chart, academic abstract, spreadsheet
Evaluating (making judgements/ decisions based on reflection and criticism; assessing concepts)	appraise, argue, assess, combine, defend, determine, evaluate, hypothesise, investigate, justify, organise, present a case for, report on, review, test, judge, monitor	Review the financial options available when implementing a commercial takeover for the scenario provided. Perform a risk analysis for each option in relation to the scenario.	group discussion/report, debate, review options, performing a SWOT analysis, carrying out a risk analysis, posting comments on blog entries, assessing resources	editorial, case study, news item, video or audio report, presentation, critique, recommendation
Creating (the ability to create new ideas, structures, models, systems, and approaches; using creative and critical thinking)	assemble, build, compose, create, design, develop, formulate, generate, establish, integrate, modify, organise, originate, propose, revise, plan	Analyse the main meals offered in the student canteen in relation to their health benefits or otherwise. Suggest alternative meals so as to create healthier options. Justify the reasons for your choices.	developing plans/procedures, devising new methods, creating new approaches/systems, brainstorming	set of rules or standards, play/poem/song, article, video, podcast, project, publication, plan, model