

Categories of learning outcomes

Knowledge or learning outcomes?

Learning outcomes

- "... are statements of what a learner is expected to know, understand and/or be able to do at the end of a period of learning."¹⁾

The most desired outcome of learning is of course **knowledge**. Yet, if one uses it's more precise **definition**, one should be aware that it is not the only and not a necessary learning outcome. For example, a learning outcome can be no new knowledge at all, it can be a misinformation, or an unusable belief lacking certainty.

But even the learning outcomes that satisfy the definition of knowledge can still be very different and are often divided into categories or types, which also allow for them to be assessed accordingly.

Bloom's taxonomy of learning outcomes

Bloom's taxonomy of learning outcomes was one of the first and most notable attempts to create a framework for what is expected of students to learn as the result of the instructional process. It was also intended to enable formation of data banks of items assessing same learning outcome which could even be exchanged between universities and lower the labor required for preparing examinations.²⁾ Blooms original taxonomy was introduced in 1956³⁾, and distinguished between three domains of knowledge (cognitive - mental skills, affective - feelings and attitudes, and psychomotor - physical skills), but developed in details only the cognitive domain as follows:

	Type	Definition
1.	Knowledge	Knowledge of specifics (facts and specific terminology), ways and means of dealing with specifics (conventions, trends, sequences, classifications, categories, criteria, methodology), and universals and abstracts in field (principles, generalizations, theories and structures).
2.	Comprehension	Translation, interpretation, extrapolation.
3.	Application	-
4.	Analysis	Analysis of elements, their relationships and organizational principles.
5.	Synthesis	Production of a unique communication, plan, proposed set of operations, derivation of a set of abstract relations.
6.	Evaluation	Evaluation in terms of internal evidence and judgements in terms of external criteria.

The mentioned six categories represent a hierarchy in which the next type of learning outcomes cannot be achieved unless the current, more simple one is mastered. They were often used to show the breadth (or lack of it) of the assessed learning outcomes, which were often limited just to the first category (knowledge), although other categories like comprehension and analysis are often referred to as the most important educational outcomes.⁴⁾

Revised Bloom's taxonomy

Bloom's taxonomy of learning was revised a number of times by other researchers, yet the revision gaining most attention was introduced in 2002⁵⁾, suggesting some improvements to the original taxonomy, especially in the concept of the most simple learning outcome - knowledge. Based on the more recent advancements in the area of cognitive psychology, knowledge is according to the revised taxonomy divided in four types⁶⁾:

	Type		Definition	Examples
1.	Declarative knowledge	Factual knowledge⁷⁾	The basic elements students must know to be acquainted with a discipline or solve problems in it.	

1)

Bologna Website cited by [Learning outcomes: Common framework – different approaches to evaluation learning outcomes in the Nordic countries. Nordic Quality Assurance Network for Higher Education, 2008.](#)

2), 4), 6)

[Krathwohl, David R. A Revision of Bloom's Taxonomy: An Overview. Theory into practice 41, no. 4, Autumn 2002.](#)

3)

[Bloom, Benjamin Samuel. Taxonomy of educational objectives: the classification of educational goals. Longmans, Green, 1956.](#)

5)

[Anderson, Lorin W., David R. Krathwohl, and Benjamin Samuel Bloom. A taxonomy for learning, teaching, and assessing: a revision of Bloom's taxonomy of educational objectives. Longman, 2001.](#)

7)

Factual and conceptual knowledge is sometimes known as *declarative knowledge*

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